HISTORY

OF THE

SOUTH AMERICAN TELEPHONE AND TELEGRAPH SYSTEMS

ARGENTINE, BRAZIL
CHILE, COLOMBIA
AND
URUGUAY

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History of the Telephone and Telegraph *in the* Argentine Republic

1857—1921

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ARGENTINE REPUBLIC

GENERAL DATA

Area: 1,153,418 square miles
Population: 10,000,000*
Capital: Buenos Aires. Population 1,900,000*

STATE TELEGRAPH

Origin and Development until 1875

It is a singular fact that Argentina possessed cable communication with the outer world before it had practically any land telegraph. This anomaly is due to the fact that a corporation, known as the River Plate Telegraph Company, was formed to work a 15-year concession which had been granted to Messrs. John Proudfoot and Matthew Gray of London on December 10, 1864, and which provided for a land and submarine line from Buenos Aires to Montevideo (Uruguay). This line was opened to the public November 30, 1866.

The honor of being the pioneer of the land telegraph belongs to the Western Railway of Buenos Aires. Being of an experimental character, the telegraph line had an extent of only 6 miles. Service commenced August 30, 1857. In passing, it is of interest to note that this Western Railway was itself the first railroad constructed in the country.

The next telegraph line, built in 1868, was due to

*Estimate for 1919

the enterprise of the Province of Buenos Aires, and connected the cities of Buenos Aires and Rosario.

Up to 1869 the Government had not taken any steps towards the construction of a National telegraph system. The active development of the National telegraph commenced, however, in 1869, under the presidency of Dr. Domingo Faustino Sarmiento, a keen statesman who recognized that the future commercial and industrial expansion of the country demanded most of all means of rapid telegraphic communication between the different parts of the vast, undeveloped territory. So thoroughly convinced was Dr. Sarmiento of the urgent need of the electric telegraph that he is said to have used appropriations, provided in the Budget for other purposes, to carry out his favorite project. It is related that, being asked by one of the Deputies for his authority to use funds appropriated for the construction of "Bridges and Roads" for the building of telegraph lines, Dr. Sarmiento vindicated himself by replying that he had used the money in building "the bridge of the word." To hasten the work he obtained the services of a European telegraph engineer, who laid the foundation of the future National telegraph system.

That the year 1869 was officially recognized as the starting point of the National telegraph is substantiated by a citation from the Memoria of the Minister of the Interior for the year 1878. Commenting on the development of the telegraph, he wrote:

"Cuando en 1869 se firmaron los primeros contratos para el establecimiento del telégrafo nacional, nada creia en la realización de este hecho que hoy he pasado ya a ser un incidente ordinario de la vida de este pueblo."

(When in 1869 the first contracts were signed for the establishment of the National telegraph, no one believed in the realization of the project which to-day is an ordinary occurrence in the life of our people.)

The first section of the national telegraph line, connecting the cities of Rosario and Paraná, was opened to the public September 10, 1870. The line was built at an expense of 64,500 pesos fuertes. The rate for a telegram of 10 words varied, according to distance, from 25 centavos to one peso.

Shortly thereafter telegraphic communication was established between the capital and the cities of Mercedes, Carmen, Salto, Rojas, Pergamino, and San Nicolas.

The following list shows the date of the inauguration of the national telegraph lines in the various provinces of the Republic:

Provinces	Date of Inauguration	Length of Line from Buenos Aires
Entre Ríos	September 10, 1870	535 km.
Santa Fé	September 10, 1870	510 "
Buenos Aires	March 10, 1871	....
Córdoba	May 4, 1871	671 "
Santiago del Estero	November 16, 1871	1189 "
Tucuman	November 16, 1871	1374 "
Corrientes	December 1, 1871	1189 "
Catamarca	October 10, 1872	1404 "
Salta	October 18, 1872	1705 "
Jujuy	November 14, 1872	1789 "
Rioja	December 19, 1872	1555 "

During the year 1870 the first subfluvial cable was laid through the Paraná River, and connected the provinces of Santa Fé and Entre Ríos.

In 1871 the Compañía del Telégrafo Trasandino (to-day the Central & South American Telegraph Company) constructed the first international telegraph line between Villanueva (Province of Córdoba) and Valparaiso (Chile).

On June 8, 1872, a concession was granted to Lamas & Company to connect the city of Buenos Aires with Rio de Janeiro (Brazil) by means of a submarine and subfluvial cable, the concession providing that the Government could take over the line after 10 years.

The law of October 5, 1872 (No. 572) authorized the President to take 102,000 pesos from the State revenue for the construction of a telegraph line between Buenos Aires and Córdoba and another line between Rosario and Santa Fé.

In August, 1874, Argentina came in to telegraph communication with Europe. The route was via the River Plate Telegraph Company's system to land line extending from Montevideo (Uruguay) to the Brazilian land lines at Yaguaron, from there to Rio Grande, and from Rio Grande by submarine cable via Pernambuco to Europe.

The first legislative act referring to the electric telegraph is recorded in the year 1857. A proposition had been submitted to the Government by

Don Jacinto Feires de Robira which provided for the building of electric telegraphs between various points of the Federation. After due deliberation, Congress, by Law No. 120 of August 12, 1857, declined Robira's offer. The next telegraph legislation dealt with the linking up of the capital with the Republic of Chile (Law No. 191 of September 22, 1866). Article 1 authorized the President to sign a contract for interconnecting Buenos Aires with Chile. In Article 3 the Government promised to pay to the contractor, for a period of 12 years after the line was finished, 8% annually on the total capital investment, which was estimated at 200 pesos fuertes per mile.

The Memoria of the Minister of the Interior for the year 1874 furnishes the earliest statistics relating to the telegraph traffic over the national lines:

1870	6,640	telegrams
1871	61,429	"
1872	181,773	"
1873	170,823	"

The total extension of the telegraph lines is given as 4,146 kilometers, and the number of public telegraph offices as 58.

Growth and Extension 1875-1890

Up to the year 1875 the Argentine telegraph had developed without any definite governmental policy regarding the regulation of the business. As a result of this oversight on the part of the government, pro-

vincial, railway, and private companies' lines were built, which were not infrequently a menace to public safety. Telegraph Law No. 750 of October 7, 1875, remedied this situation. The introductory paragraphs declare that the telegraph is a Government monopoly, and that all lines interconnecting a federal territory with one or more provinces are to be considered national telegraph lines. Likewise, lines connecting one province with another, and lines that place any point within the territory of Argentina in connection with a foreign state, are considered national telegraph lines. Provincial governments are permitted to construct telegraph lines within their territory without first obtaining permission from the Federal Government, but they must respect all concessions granted by the latter to private companies. Thereafter, no telegraph line except railroad telegraphs may be constructed within the territory of the Republic without the sanction of the National Government, or in case of a special concession, without sanction of Congress. Private companies cannot furnish a public telegraph service unless they have obtained authority from Congress. Such companies are forbidden to transfer their concessions without the approval of the Government or Congress. Article 74 places the general management of the National telegraph in charge of a Director General of Posts until a law has been enacted organizing the "Oficina General de Comunicaciones." Article 141

permits the renting of the national telegraph lines to the public for the direct exchange of communications (para usarlas en conversación). Article 146 prescribes that persons desiring to exchange direct telegraphic communications should present themselves at their respective telegraph offices where they shall give and receive orally the message. This law of 1875 took effect in February, 1876, in accordance with a decree signed January 3, 1876, which made it mandatory on the part of the Director General oj Posts to prepare immediately general rules governing the National telegraph.

The progress of the National telegraph since 1869 is commented upon in the Memoria for 1878: "In scarcely 10 years we have succeeded in linking up by telegraph the most distant points of the National territory, and we have now in operation 6,000 kilometers of telegraph line."

It will be recalled that the law of 1875 permitted the provinces to create their own telegraph systems. Naturally the Province of Buenos Aires was the first to make use of this privilege, the next being Entre Ríos. Evidence of the rapid development of these provinical lines is contained in the "Anuario Estadístico" of the Province of Buenos Aires for 1883, which chronicles the following data:

Total kilometers of telegraph wire in Argentina....	15,671
Of these were in the Province of Buenos Aires.....	6,379

i.e. National	1,613 km.
Provincial	3,585 "
So. Railroad	1,023 "
Ensenada Railroad	56 "
Northern Railroad	21 "
Campana Railroad	81 "

By the end of 1883 the Province of Buenos Aires was connected by telegraph with all other provinces of Argentina, and by transatlantic cable with the Continent of Europe.

In 1887 the Government granted an important concession to D. S. Buratovich to interconnect telegraphically Buenos Aires with Montevideo (Uruguay).

During 1888 the Argentine Government exchanged notes with various South American republics in regard to becoming a member of the Convención Telegráfica Internacional, and on January 1, 1889, joined this convention. The Memoria of the Minister of the Interior for that year contains the first Informe, or Annual Report of the Director General of Telegraphs, Dr. R. J. Carcano. This report was addressed to the Minister, and was transmitted by the latter to the National Congress.

At the end of 1899 the National telegraph system had grown to 20,330 kilometers of line, with 45,300 kilometers of wire. Altogether, 5,854,900 telegrams had passed over the lines, of which 3,318,000 were paid messages.

During 1890 the Telegraph Administration signed an important contract with Emilio Bieckert & Co.,

which provided for laying a submarine cable between Argentina and Europe. The specifications required that the cable should be led up on Ascension Island and terminate in the city of Marseilles. The contract, signed July 12, 1890, also stipulated that the work should be finished within 30 months, and that the rate for an ordinary message should be 5 francs per word. Under the terms of the agreement Bieckert & Co. are permitted to transfer this concession to a private company. Article 16 provides that for 20 years dating from the inauguration of the cable service Argentina should pay either to Bieckert & Co., or to their successor, 5% annually, as interest upon the capital investment of 11,000,000 pesos gold, and should pay such interest even though the original capital were increased. Article 20 stipulates that 99 years after the inauguration of the service the cable with all its accessories shall become the property of the Government, without any further payment, and that the cable must be handed over in perfect working condition.

Reconstruction and Development since 1890

Having traced so far the development of the National telegraph, it is timely to inquire about the administration of the service. In the Memoria of 1891, under the chapter "Line Construction," the Director General of Posts and Telegraphs, Dr. Estanislao Zeballos, informs the Minister of the

Interior that the entire telegraph plant needs complete reconstruction. Referring to the period 1888–1890, he writes:

"There has never been any accounting of the telegraph service, there are no ledgers, and such books as have been kept do not deserve that term. Moreover, they are full of mistakes and grave errors. A careful search instituted under my direction has revealed a mass of defraudations, and for this reason, commencing September 1, 1891, we have opened an entirely new set of books."

In view of this official and uncontradicted information, it is plainly useless to inquire into the financial results of the National telegraph from its inauguration to the close of 1890.

Of still greater importance than the absence of proper methods of accounting, and bearing more directly upon the efficiency of the service, is the physical condition of the plant. During the early period of construction, however faulty may have been either the material employed or the method of erecting the lines, there were no serious complaints in the annual reports; but by 1892 by far the greater part of the plant had deteriorated to such an extent that immediate reconstruction became imperative. Quoting from the 1892 Memoria: "The bad condition of our lines is due to lack of systematic development and insufficient repairs."

In the subsequent years the public demand for

better telegraph facilities became so urgent that on September 2, 1905, the Legislature enacted Law No. 4641, which authorized the construction of numerous new lines to connect the capital with important commercial centers. Notwithstanding this legislation, 6 years later, according to the report of the Telegraph Director for 1911, less than one-half of the contemplated number of lines had been built. Moreover, the Director stated in his report that the greater part of the existing lines were in an exceedingly bad condition. Four years thereafter the same official, reporting to the Minister of the Interior, called attention to the fact that though 10 years had passed since the Government had been advised of the serious condition of the lines, very little had been accomplished. He wrote:

"I think it is sufficient to refer to the projects submitted to you in 1912 and 1915. The first covered a vast plan of reconstruction and consolidation of the principal national lines at an expenditure of pesos 6,337,270 m/n, but after a lapse of 4 years matters remain as heretofore. The second project, submitted to the consideration of Congress July 14, 1915, did not contemplate the reconstruction of all main lines, but only the replacement of such as demand immediate attention. The estimated expense was pesos 1,226,900 m/n. Though favorably reported on by the Committee of Congress, so far it has not reached the House of Representatives. . . .

The consolidation of the telegraph plant, a work that daily becomes more difficult on account of the progressive deterioration of the lines, requires the decisive and immediate attention of the legislative bodies, and needs a vast expenditure of money far beyond the means at the disposal of this Department."

The 1917 Report of the Director of Telegraphs mentions the bad condition of the telegraph lines in Patagonia: "cuyo estado es realmente deplorable;" while in the 1918 Report the Director devotes an entire chapter to the unsatisfactory condition of the National telegraph:

"I have stated in my last year's report that the volume of telegraph service has considerably increased, despite the general bad condition of our lines partly due to the difficulty we have in procuring the necessary material and to insufficient budget appropriations, and also to strikes of the personnel, all of which have not only prevented the building of proposed new lines, but also the general repair, renovation, and addition to our telegraph wire, needed especially for our southern lines. . . . Our telegraph plant at present amounts to approximately 40,000 kilometers of line, with 100,000 kilometers of wire. These figures, which by themselves are impressive, become far more so if it is remembered that the 40,000 kilometers of line are strung over an area of about 3,000,000 square kilometers."

That this bad condition of the lines did not im-

prove during 1919, but on the contrary became worse, is obvious from the following paragraph taken from the 1919 Report:

"The task of the Telegraph Administration has been a difficult one, due to the unavoidable necessity of attending to imperative demands with insufficient budget appropriations. If we may claim a certain degree of success, despite such drawbacks, it is nevertheless plain that, notwithstanding the work that has been accomplished, the problem of telegraph communication has assumed a still graver aspect as the increase in our traffic has gone on, hand in hand with the deterioration of the telegraph lines, which are in a condition that excludes further temporary repairs without loss of their carrying capacity. We therefore find ourselves confronted by a yet more serious and complicated situation than that existing last year, which is easily understood because to the existing troubles have been added those of an increased volume of traffic that cannot be refused nor turned aside without jeopardizing the most valuable business interests of the country."

TELEGRAPH RATES

As 29 laws have been enacted from 1872 to 1919 concerning telegraph rates, only a few of the most important are noted below:

1. *Law No. 573 (Oct. 9, 1872).* Rates for year 1873: 25 centavos for every 10 words or fraction thereof.

2. *Law No. 823 (Oct. 13, 1876)*. Rates for year 1877: 30 centavos for first 10 words; for each subsequent 10 words or fraction thereof 20 centavos.

3. *Law No. 905 (Oct. 13, 1877)*. Rates for year 1878: 40 centavos for first 10 words; for each additional 10 words or fraction thereof 20 centavos.

4. *Law No. 1361 (Jan. 18, 1883)*. Rates for year 1884: Ordinary message: 4 centavos per word for the first 10 words and 2 centavos for each subsequent word. Address and name free.

Urgent message: 12 centavos per word for the first 10 words and 6 centavos for each subsequent word.

Telegraph conferencias: 5 pesos for the first 15 minutes and 1 peso for each subsequent period of 5 minutes.

5. *Law No. 1730 (Oct. 3, 1885)*. Rates for year 1886: For an ordinary message not exceeding 5 words, 20 centavos; for each additional 5 words, 4 centavos per word. Name and address free.

6. *Law No. 3891 (Dec. 30, 1899)*. For an ordinary telegram over the national lines (or over the lines of provincial governments, railways and private companies that have joined the Argentine Convention), the rate is 5 centavos per word for the first 10 words and 3 centavos for each additional word.

Special tariffs apply to urgent messages, telegraph conferencias, etc.

Similar telegraph rate laws were enacted between 1900 and 1915; but in the latter year the Administration decided to make a radical change, based upon a careful study of the number of words contained in an ordinary telegram, paid for at the rate of 50 centavos* (21.2 cents). It appeared that of 100 messages taken as the unit of comparison, 84 contained the maximum admissible number of words

*One paper peso = $0.425 U. S. currency.

under the above rate, notwithstanding the fact that in 66 the number of words could have been considerably reduced without affecting the clearness of the message. From this test the Administration reached the conclusion that, in the interest both of more efficient service and of increased revenue, the former telegraph tariff should be changed by adopting a basic charge plus a word tax. Consequently, a new tariff law was submitted to the Argentine Congress, calling for a basic charge of 30 centavos (12.7 cents) per telegram, plus 4 centavos (1.7 cents) for each word, the new rates to become effective January 1, 1916. After prolonged deliberation Congress, on July 6, 1920, enacted Law No. 11025, which, as it is the present Telegraph Rate Law, is inserted here in full:

"*Art.* 10. The rates for domestic telegrams over all lines declared to be national lines in accordance with the law of 1875, also for messages over lines of private companies that have joined the Argentine Telegraph Convention, shall be as follows:

1. ORDINARY TELEGRAMS: A fixed charge of 20 centavos plus 5 centavos for each word, counting text, signature and address.

2. URGENT TELEGRAMS: A fixed charge of 20 centavos plus twice the rate per word charged for an ordinary message.

3. ACKNOWLEDGMENT OF RECEIPT: 50 centavos additional.

4. MULTIPLE TELEGRAMS: In addition to the ordinary date for the proper class, a fixed charge of 50 centavos for each address less one.

5. RETRANSMISSION OF TELEGRAMS: A fixed

charge of 20 centavos and as many times the ordinary rate as retransmissions are required.

6. TELEGRAPH AVISOS: A fixed charge of 20 centavos and twice the ordinary rate for each address.

7. COLLECT MESSAGES: A fixed charge of 20 centavos and 4 times the rate charged for an ordinary telegram.

8. COLLECT URGENT MESSAGES: A fixed charge of 20 centavos and 6 times the rate charged for an ordinary telegram.

9. MESSAGES IN CODE OR CIPHER: A fixed charge of 20 centavos and 4 times the rate charged for an ordinary telegram.

10. URGENT MESSAGES IN CODE OR CIPHER: A fixed charge of 20 centavos and 6 times the charge for an ordinary telegram.

11. MESSAGES IN FOREIGN LANGUAGE: A fixed charge of 20 centavos and twice the charge for an ordinary telegram.

12. ABBREVIATED OR CODE ADDRESSES: For each address registered 10 pesos for 6 months.

13. TELEGRAPH CONFERENCIAS (conversations): For the first 15 minutes, 20 pesos; for each subsequent 5 minutes, 5 pesos; after one hour, 10 pesos for each additional 5 minutes.

14. COPIES OF TELEGRAMS: 1 peso for each copy of 100 words or fraction thereof.

15. DUPLICATES OF RECEIPT OF CHARGE OF TELEGRAM: 20 centavos for each duplicate.

16. EXPRESS CITY MESSAGES: Up to 20 words, counting address and signature, 50 centavos. With prepaid answer, 1 peso.

17. LETTER TELEGRAMS: Up to 50 words, including address and signature, 1 peso; up to 100 words or fraction beyond 50 words, 1.50 pesos, the maximum number of words not to exceed 200.

"*Art.* 11. Telegrams to and from places outside the

country, 8 centavos gold* for each word sent over the national lines as designated in the law of 1875.

"*Art.* 12. Press Telegrams containing news of public interest or destined for stock exchanges or commercial centers pay 50% of the rate charged for an ordinary telegram."

RAILROAD TELEGRAPH

By the Telegraph Law of 1875 railroad companies were permitted to furnish a limited telegraph service to the public, provided they had obtained permission to do so from the Government. By the end of 1881 the railroad telegraph lines represented 22% of the total of 11,884 kilometers of telegraph lines in the Republic, and at the close of 1919 this figure had increased to 54%, *i. e.:*

Railroad Telegraph........	144,532 km.	54%
Government Telegraph.....	100,065 "	37%
Provincial Telegraph.......	13,589 "	5%
Private Companies.........	10,677 "	4%
Total................	268,863 km.	100%

Until the year 1907 the Government had been extremely liberal in granting concessions to railroad and private telegraph companies, and had received but little benefit in return. Moreover, although the law of 1875 stipulated that the railroads, in lieu of their concessions, should have one conductor strung on the poles along the road-bed for the use of the Government, many of the companies refused to comply with this stipulation, and openly transgressed

*One gold peso = $0.965 U. S. currency.

other important obligations. As a result of this attitude on the part of the railroads the Legislature passed the "Ley Mitre" (Law No. 5315) on September 30, 1907, which provided that thereafter all railroad companies which received additional concessions for the extension of their main lines must string one extra conductor parallel to their road-bed and hand over this wire gratuitously to the Government, to be operated as a part of the National telegraph. Up to December 31, 1915, the National telegraph system had received 5,293 kilometers of telegraph wire from the railroad companies without any expense whatever to the Government.

STATE TELEPHONE

Local Service

While the Government has at no time attempted to install urban exchanges, it has used the telephone, at least to some extent, as an auxiliary to the telegraph. To quote from a letter written by the Director General of Posts and Telegraphs, in 1914: "The Government of Argentina has never exploited the telephone service." There are, however, a number of privately built telephone lines whereby State telegraph offices are connected with business houses and private residences. None of these lines exceed 30 kilometers in length, and in accordance with Article 12 of the Decree of 1912 they become the

property of the Government after 30 years, without any compensation to the former owner. The building of these private telephone lines at the expense of the petitioner was authorized by the law of 1911 (No. 8876). The method of constructing them was prescribed in the Presidential Decree of November 27, 1912.

From statistics published in the *Anuaire Statistique de la Province de Buenos Aires* for 1885, it appears that the Telegraph Department had connected the capital by telephone with several suburban towns, such as Flores, Belgrano, Quilmes, and others. These statistics also show that five telephone offices had been opened to the public, and that the monthly subscription charged for service was pesos 8.50 m/n ($3.60). The total number of subscribers was 105, and they were served by 8 employees. This, however, seems to have been the first and only venture of the Government into the field of local telephone service.

On March 3, 1883, the Government issued a decree which provided that the telephone, meaning thereby the construction of lines and furnishing of service, should be subject to the enactments of the Telegraph Law of 1875 until a special law had been passed. Subsequently, the Department of the Interior instructed the Department of Police to supervise the construction of telephone lines, and at the same time requested the Director General of Tele-

graphs to prepare and issue rules and regulations governing the telephone service. A "Reglamento General de Teléfonos" appeared February 7, 1902, which prescribed the rules applying to service over private telephone lines. Thereafter the Government restricted itself to the granting of concessions and the general supervision of the private companies furnishing a local or interurban telephone service.

Long Distance Service

The first international long distance telephone concession was granted on December 30, 1889, to D. Daniel MacKinley, and provided for the construction of a line to be used for the transmission of telegraph messages and telephone conversations between Buenos Aires and Rosario. Article 4 stipulated that the rate for the "transmission of the voice" should be fixed in accordance with the provisions of the Telegraph Law of 1875. This concession is mentioned because, by decree of July 11, 1900, it was transferred to the "Compañía Telegráfico-Telefónica del Plata," a company with a share capital of 500,000 pesos, which was organized in 1887, and received its charter on March 14, 1888. This company has been the object of bitter complaints by the various Director Generals of Posts and Telegraphs, on account of its persistent abuse of the privileges granted by its concession.

During the early period of the introduction of the

telephone the Government freely granted concessions, but this attitude changed completely in later years, as is shown in the chapter dealing with Private Telephone service. The following paragraph, quoted from the Annual Report of 1910–1911 of the Director General of Posts and Telegraphs to the Minister of the Interior, gives the Director General's reason for advocating a change in the Government's policy regarding the granting of concessions. "The above considerations lead me to think that hereafter the Government should be very sparing with the grant of telephone concessions to private companies, because the latter, though careful in living up to their obligations, always put their own interests first, interests that are generally incompatible with the nature and aims of this public service. Monopolization by the Government of electrical means of communication is, doubtless, the future solution of this subject." These comments were based on continued transgressions of the above mentioned "Compañía Telegráfico-Telefónica del Plata." This company operates a direct long-distance telephone line between Rosario and Montevideo (Uruguay).

In various other reports addressed to the Minister of the Interior, the Director General of Telegraphs continued to voice and emphasize the danger of competition by privately built long-distance telephone lines with the National telegraph. This apprehension gradually led the Government to adopt a policy

of preventing a normal extension of privately constructed long-distance telephone lines. In this respect the most drastic measure taken by the Government was the so-called "Castillo" law of 1912, which declared that any inter-state telegraph or telephone line thereafter constructed should revert to the Government after 30 years, without compensation to the licensee, a provision that retarded the expansion of the existing lines, and also prevented any new construction. Fortunately, this law was repealed March 16, 1920.

The latest development touching the situation is a draft of a law dated September 3, 1920, submitted to the Minister of the Interior by the Director General of Posts and Telegraphs, which contains the following preamble: "As the Presidential Decree of March 16, 1920, has suspended all former laws relating to the operation of public telephone service by private companies, the Director General considers it indispensable that bases should be established to govern concessions for public telephone service, and for this reason, after a careful and extensive study, submits a draft of law in the hope that it may meet with the approval of the Minister of the Interior."

Article 15 bars the granting of telephone exchange licenses in localities where there exists an exchange operating under a prior license. Article 32 states that concessions are granted for a term of 50 years, commencing with the date of the signing of the de-

cree by the Executive Power. At the expiration of the license, the local exchange, lines, and all accessory apparatus that may have been added—all in perfect working condition—shall become the property of the State without any compensation. The full text of the proposed legislation is given at the close of this paper. Up to May, 1921, the Government had taken no action in the matter.

PRIVATE TELEPHONE

Concessions Granted 1881 to 1913

The reluctance of the Government to enter the telephone field is the reason that the Argentine Republic leads all South American countries in the number of private telephone companies and telephone users. On January 1, 1920, there were about 111,000 telephones in use in the Republic, or 42% of the total telephones in South America.

Local telephone service began in 1881 by the grant of three concessions: the first, March 2, 1881, to the Compañía de Teléfonos Gower-Bell; the second, April 5, 1881, to the Compañía de Teléfonos Graham Bell; the third, April 19, 1881, to the Compañía Pan Teléfono de Loch. The last mentioned company started the first telephone exchange in the city of Buenos Aires in May, 1881, the exchange being known as "La Minerva." In the same year the Gower-Bell Company, represented by B. D.

Manton, formed the "Bolsa Telefónica," also in the capital, with 34 subscribers.

In July, 1882, the Director General of Posts and Telegraphs, with the consent of the "Comisión Municipal" of the capital, issued a decree authorizing O. Straube "para establecer oficinas telefónicas" in Buenos Aires; but in the absence of any additional data it is not known if any actual work was done under this concession. In the following year the Pan Teléfono company amalgamated with the Gower-Bell, the new company adopting the name of "Compañía Unión Telefónica." The Compañía Unión Telefónica continued to operate until 1886, when it was taken over and reorganized by English capitalists. The reorganized company was incorporated under the name of "The United River Plate Telephone Company, Limited," the largest telephone company in Argentina. At the beginning of 1920 this company operated about 70% of all telephones in the Argentine Republic.

In regard to the early period of telephone development in Argentina there seems to be a total lack of statistical or other information, largely due to the fact that the telephone companies were private undertakings that jealously guarded their interests. For the earliest publication of telephone statistics we are indebted to the "Anuaire Statistique de la Province de Buenos Aires, 1896," which data, on ac-

count of their historical value, are quoted here in their entirety:

Name of Company	Capital (Pesos)	Wire Length (Kilo.)	Offices	Subscribers
Unión Telefónica del Rio de la Plata	2,201,000	4,600	32	7,000
Cia. Telegráfico-Telefónica del Plata	500,000	573	6	....
Cia. Telefónica de la Province de B. A.	335,000	1,150	13	500
Sociedad Cooperativa Telefónica	50,000	471	4	111
Telefónica de San Nicolas	30,000	10	1	15
Cia. Telefónica de Mercedes	20,000	2	..	....
	3,136,000	6,806	56	7,626

Up to the year 1913 the Argentine Government possessed no general data concerning the telephone development of the country. In 1913, however, at the instance of Sr. Ricardo Pillado, the Director General of Telegraphs, a Telephone Census was ordered. The statistics are published in *Boletin No. 16, Telefonos*, and cover the year 1912. This report shows that, from 1882 to 1912, the Government had granted concessions to 71 companies, *i.e.*:

1882	1	1903	3	
1885	3	1904	1	
1886	2	1905	6	
1887	3	1906	4	
1888	2	1907	6	
1889	1	1908	3	
1896	1	1909	4	
1899	1	1910	6	
1900	3	1911	1	
1901	2	1912	2	
1902	3		—	58
Railroad Companies (furnishing telephone service)				13
				71

At the close of the period covered by the Census (1912) the total capital invested in the telephone service by the operating companies amounted to pesos 34,750,000 m/n ($14,700,000), the extent of wire was 297,000 kilometers, the number of subscribers 54,777, and the number of employees 4,494.

Legislation of 1904

Until the year 1900 neither the private telephone companies nor the recently opened radiotelegraph installations had been made the subject of special legislation. In fact, the only law applicable to electric communication continued to be the Telegraph Law of 1875. To remedy this situation the Minister of the Interior in 1900 prepared a draft of a new law for the consideration of the National Congress. He commented upon the proposed law in his Memoria for the year 1901 as follows:

"A draft of law is now before the Legislature by which the terms of the General Telegraph Law are made to include all private telephone and radiotelegraph companies. Our first telegraph law, written as it was in 1875, could not specifically include in its dispositions the telephone and radiotelegraph, both of which are merely improved forms of electrical communication. All our administrative measures, such as the stipulations inserted in the concessions or contracts, leave the Government without sufficient power to properly control and regulate companies in the

interest of an improved public service, and even in the very interest of the operating companies. Indeed there are some telephone systems supplying a public service without proper administrative supervision. Moreover, several of these companies interconnect various provinces, or connect through their system with the capital, and even with a foreign state. While waiting for the passage of the new law the Department is engaged in a study of the best means to solve the problem of telephone communication in harmony with the interests affected thereby."

However, it was not until September 17, 1904, that the Legislature finally passed this proposed legislation, at which time it was approved as Law No. 4408. Article 1 reads: "It is hereby enacted that the disposition of the Law of October 7, 1875, concerning the National telegraph shall apply equally to companies furnishing either a telephone or radio-telegraph service connecting a federal territory with a province, two provinces with one another, or any point within the country with a foreign state."

The recent policy of the Argentine Government, which aims at the acquisition of telephone trunk lines, was mentioned in the last chapter, and is discussed at length in the Report of Proceedings at the 27th Ordinary General Meeting, April 29, 1913, of The United River Plate Telephone Company. The report for the following year shows that the Government so far relaxed its policy as to permit an increase

in the number of circuits to any towns where the Company was already established, provided the company showed that the traffic demanded such an increase.

The history of the telephone service in Argentina would be incomplete without a synopsis of the two most important companies having their headquarters in the capital, *i. e.*, "The United River Plate Telephone Company, Ltd." and the "Sociedad Cooperativa Telefónica."

THE UNITED RIVER PLATE TELEPHONE CO., LTD.

The United River Plate Telephone Company, Limited, is an English corporation, registered in London, December 17, 1886. It was formed to amalgamate the businesses in the Argentine Republic of the River Plate Telephone and Electric Light Co., Ltd., and the United Telephone Co. of River Plate, to each of which 8,000 fully paid shares were issued.

On March 31, 1912, the amount of capital stock was as follows:

Authorized (300,000 shares of £5 each)	£1,500,000
Issued:	
40,000 Preference Shares (£5 each)	200,000
230,000 Ordinary Shares (£5 each).	1,150,000
	£1,350,000

In the year 1912 the capital of the Company was

increased to £2,000,000. During 1921 it is proposed to again increase it to £2,500,000.

While its main field of activity has been in the city of Buenos Aires and suburbs, the Company has devoted considerable attention to installing telephones in the Provinces of Buenos Aires, Santa Fé, and Córdoba. The progress of the Company since 1909 is shown by the following statistics:

	1909	1919
Number of exchanges.........	80	140
Number of stations...........	28,792	78,171

The latest Annual Report published by the Company gives the value of its plant as £3,362,000. Prior to the World War the annual capital expenditure was between £300,000 and £400,000, but since 1914 it has averaged only about £100,000 per year. Due to the inability of obtaining telephone apparatus from Europe, the Company had in June, 1920, over 5,000 applicants for service on its waiting list.

Of the total number of telephones in use in the Argentine Republic on January 1, 1920, The United River Plate Telephone Company, Ltd., operated about 70%.

The city of Buenos Aires has imitated the city of New York as regards the construction of skyscrapers, and this has necessitated the installation of Private Branch Exchanges. Thus as early as July, 1911, the Directors reported: "We have already installed in

Buenos Aires 73 Private Branch Exchanges, controlling 2,114 instruments, and month by month we keep adding to this number with satisfactory results to all concerned."

Automatic systems have been installed in the cities of Córdoba and Rosario, and during 1921 the Company expects to open several exchanges of the Strowger type in Buenos Aires.

Year	Number of Stations	Year	Number of Stations
1900	8,089	1910	34,540
1901	8,484	1911	40,325
1902	8,680	1912	47,326
1903	9,542	1913	53,792
1904	12,402	1914	54,439
1905	15,573	1915	56,582
1906	18,494	1916	60,568
1907	21,042	1917	65,788
1908	23,861	1918	72,005
1909	28,792	1919	78,171

SOCIEDAD COOPERATIVA TELEFONICA

Shortly after the amalgamation of the telephone companies that furnished service in Buenos Aires (1883), a number of business men, believing that the result of the amalgamation would be the virtual establishment of a monopoly with a consequent heavy increase in rates, started a movement towards the formation of a cooperative telephone association. The leader, David H. Atwell, issued a prospectus

January 8, 1887, advocating the incorporation of such an association, with a Share Capital of pesos 200,000 m/n, divided into shares of pesos 20 each, and on January 11, 1887, a list was published of the persons who had promised to take shares. On January 14 a provisional Board of Directors was formed, consisting of Messrs. Diego Ramsay, Remigio Tome, Carlos Zorraquin, Felipe Schartz, and Carlos Carranza. A general meeting of the shareholders took place February 5, 1887, at which meeting the Association formally chose its officers, Carlos Zorraquin being elected President. The statutes of the Association were approved March 17, 1887, and by vote of the shareholders the officers were instructed to proceed with the construction of an exchange in the capital. During 1888 the first subscribers' lines were connected up. Due to the financial strain prevailing in Argentina during 1889 and 1890 the new Association did little further work.

The first subscribers' catalogue which appeared in June, 1888, contained the names of 735 subscribers. By June 30, 1913, the number had increased to 7,328, with 19,219 miles of telephone wire. The Authorized Capital was pesos 2,500,000 m/n, of which 1,775,000 pesos had been issued.

On June 30, 1920, the Issued Capital stood at 2,122,000 pesos, and the total plant investment had increased to pesos 3,732,000 m/n. The number of subscribers was 8,062.

June 30	Number of Subscribers	June 30	Number of Subscribers
1890	1,659	1906	4,701
1891	1,500	1907	5,349
1892	1,516	1908	5,790
1893	1,822	1909	6,164
1894	1,900	1910	6,779
1895	2,099	1911	7,162
1896	2,207	1912	7,295
1897	2,354	1913	7,328
1898	2,366	1914	6,940
1899	2,636	1915	6,285
1900	2,890	1916	6,057
1901	2,843	1917	6,251
1902	2,762	1918	6,628
1903	3,263	1919	7,293
1904	3,573	1920	8,062
1905	4,065		

Proposed New Law Governing the Issuance of Concessions for Public Telephone Service

(Translation from "Boletín Mensual de Correos y Telégrafos," Buenos Aires, September, 1920.)

Minister of the Interior:

As the Executive Power, by decree of March 16, 1920, has suspended all former laws relating to the exploitation of the public telephone service by private companies, the Director General of Posts and Telegraphs considers it indispensable that bases should now be created to govern future concessions for public telephone service, and for this reason, after a careful and exhaustive study, submits to your Ex-

cellency a proposed draft of law in the hope that it may meet with your approval.

Art. I. In future, authority for the use and working of domestic telephone lines in the Republic will be subject to the following rules:

1. All persons receiving telephone concessions bind themselves to fulfil strictly the laws and regulations enacted under the present law and thereafter to be enacted.

2. The legal residence of a concessionaire must be within the territory of the Republic.

7. A license will be granted either for private use or for public urban or interurban service. It is understood that exchange service covers service from a public telephone station in a given locality, including a rural zone, while interurban service is that furnished between stations of two or more localities.

8. A license for private use is limited to service between one or more properties of the same licensee or between the property of one licensee and another.

9. Licensees are obliged to furnish service within the locality assigned to them by installing public offices, and must also give service in any of the other localities through which their lines pass, provided that such service is requested by 20 or more subscribers in any locality.

15. No authority shall be granted for the installation of a local exchange service in places where there already exists a telephone exchange, or in places where another licensee has already received authority to install an exchange. Such authority can only be given in cases where a person who has already received a license refuses to extend or improve the service in the public interest, after being advised to that effect by the Director General of Posts and Telegraphs.

16. National licensees are entitled to connect their lines with those of other concessionaires for the purpose of giving the public better facilities, but all agreements to that effect must first be submitted by both parties for the approval of the Executive.

17. All rates must receive the approval of the Executive Power. They shall never be less than those charged by the Government over its own lines, neither can they be changed without authority from the Government, but the latter can revise them whenever it judges that necessity for such action exists.

23. No concession can be assigned, nor is a concessionaire permitted to enter into any kind of an agreement with another telephone or telegraph company without special authority from the Executive.

26. All concessions that have been granted must be registered within 90 days from the date of the concession granted by the President. Furthermore, such licenses become void if the concessionaire fails to commence work within the time specified in the license, and in that case the concessionaire also loses the guarantee deposited in favor of the State.

29. The service for which telephone lines granted under a concession may be used is exclusively for the spoken word by means of the telephone, and under no condition is the concessionaire permitted to transmit telephonograms or apply to his line any telegraph arrangements.

30. The concessionaire also obligates himself to install and maintain, free of charge, from the time of the opening of the exchange and during the entire duration of the concession, a telephone apparatus in each of the postal and telegraph offices that may be installed in the locality served by the telephone exchange.

32. Concessions are only granted for a term of 50 years, commencing with the date of the signing of the decree by the Executive. At the expiration of the license the lines, local exchanges, and all accessory apparatus that may have been added—all in perfect working condition—shall become the property of the State without any compensation whatever to the licensee.

33. The Executive may also, at any time, take over the concessions granted after an appraisal of the property.

35. The appraisal shall be made for an amount arrived

at by arbiters for a valuation of the lines, apparatus, and accessories, in accordance with Article 6 of the National Telegraph Law (No. 750½).

Art. 2. The concessionaires of existing lines or exchanges will only be permitted to install new offices or extend their lines if they have previously agreed that the concessions under which the plants have been established shall be subject to the stipulations of the present law, it being understood that the date of the expiration of the license shall be computed for such licenses from the date of the present decree.

Art. 3. The present Rules and Regulations concerning the granting of licenses are hereby revoked if they are in opposition to the stipulations of the present law.

Buenos Aires, September 3, 1920.

TELEGRAPH STATISTICS OF THE REPUBLIC OF ARGENTINA*

(Includes National, Provincial, Railroad and Private Telegraphs)

Year	Extension of Wire In Kilometers	Number of Offices	Number of Telegrams Transmitted‡	Gross Revenue In Francs†
1912	207,316	2,581	8,610,523	28,263,000
1913	228,910	2,641	8,813,252	28,300,000
1914	248,723	3,195	8,128,715	27,564,000
1915	263,414	3,608	7,607,812	26,223,000
1916	264,674	3,601	*8,000,000	27,156,000
1917	266,615	3,589	8,385,376	26,357,000
1918	265,071	3,613	9,330,755	30,245,000
1919	268,863	3,769	10,703,270	35,947,000

*Telegraph Statistics furnished by the Director General of Posts and Telegraphs, Buenos Aires.

‡Paid Domestic and International messages only, excluding transit messages.

†Revenue from Domestic and International messages, excluding miscellaneous receipts.

*Estimated.

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History of the Telephone and Telegraph *in* Brazil

1851—1921

By
VICTOR M. BERTHOLD
of the
American Telephone and Telegraph Company

NEW YORK
Nineteen Twenty-two

INDEX

BRAZIL

Area: 3,276,358 square miles
Population: 30,553,000 (census of 1920)
Capital: Rio de Janeiro. Population 1,130,000 (census of 1920)

STATE TELEGRAPH

Introduction and Development under the Empire, 1851-1889

The introduction of the telegraph in Brazil is contemporaneous with the war waged by the Empire from 1851 to 1854 in defense of Uruguay against the Argentine dictator, Rosas. According to the "Memoria Historica"* Euzebio de Queiroz Coutinho Mattoso da Camara, then Minister of Justice, notified the Director of Semaphores on May 5, 1851, that he had decided to replace the optical telegraph with the then recently invented electric telegraph. In the same year the Brazilian Minister at Washington, Sergio Teixeira de Macedo, transmitted to his home government a proposal of J. L. Leonardt, a citizen of the United States, to interconnect various important cities of Brazil by electric telegraph lines. This offer, however, was not accepted.

It is reported that Euzebio de Queiroz decided to discontinue the slow-working optical telegraph, which up to that time had been the only means of transmitting messages in Brazil, as rapid communication

*Official publication of the Brazilian Telegraph Administration, printed in Rio de Janeiro, 1909.

between Rio de Janeiro and the port of Mangaratiba had become imperative so as to prevent the illegal landing of slaves, which was a frequent occurrence in those days. To carry out this project Euzebio de Queiroz instructed Dr. Paula Candido, a professor at the School of Medicine, to build a short trial line between the police headquarters in the capital and the optical telegraph station on Castello Hill. Dr. Candido, with the assistance of Colonel Polydoro Q. da Fonseca Jordão, police commissioner, secured the loan of a telegraph apparatus from Dr. G. Schüch de Capanema, professor of physics at the Escola Central. A few days later the Colonel, bitterly disappointed, returned the apparatus to the professor, saying: "Tome lá as suas machinas que não prestam." (Take back your apparatus which is useless.) He soon learned, however, that he was mistaken, for Dr. Capanema connected up the apparatus properly and gave Colonel Polydoro an actual demonstration of electrical transmission. Realizing the value of the new means of electrical communication, Colonel Polydoro went immediately to Queiroz and obtained from him an order instructing Dr. Capanema to build a line from Quinta Imperial, the country residence of the Emperor, to the Quartel do Campo, the military headquarters. This line, although constructed with cheap material, operated satisfactorily, and on May 11, 1852, telegrams were exchanged between the Emperor and Queiroz and Capanema, both stationed at military headquarters. This date is officially recognized as the date of the introduction of the telegraph in Brazil. Shortly after this took place the Consul of Brazil in Prussia was requested to

obtain five sets of Morse duplex telegraph apparatus and some line material. This equipment was received from Europe in the following year and a line was constructed between the various military establishments and the capital.

The first ordinance relating to the electric telegraph was issued by the Minister of Justice on January 17, 1864, and provided for the telegraphic interconnection of important administrative offices.

In Brazil, as in many other countries, the electric telegraph lacked the support of the public during its early development. In fact, an examination of the newspapers published in Rio de Janeiro during this period shows that there were the usual scoffers who predicted that, on account of the climatic conditions prevailing in Brazil, that country was unsuited for the successful use of the electric telegraph. Undaunted by such statements, however, Dr. Capanema commenced the construction of a line from the capital to Petropolis. The total length of this line was 50 kilometers (about 31 miles) of which 15 kilometers consisted of a submarine cable. By an imperial ordinance of March 17, 1855, Dr. Capanema was appointed Director Geral dos Telegraphos Electricos (Director General of Electric Telegraphs), and was requested to create an administrative office known as Direcção Geral.

The electric telegraph was used for official business only until 1858, when on August 1st the Government opened the Prainha-Mauá-Fragoso-Petropolis line to the public.

The first "Reglamento" or rules and regulations governing the telegraph service are embodied in

decree No. 2614 of July 21, 1860, which stated that the telegraph service should be placed under the direct supervision of the Ministry of Agriculture, Commerce and Public Works. This decree prescribed that service should be furnished to the public between the hours of 6 A.M. and 6 P.M. in summer and 7 A.M. and 5 P.M. in winter, and established a tariff consisting of a charge of 80 reis* (2.6 cents) per word for a message of 20 words and 40 reis (1.3 cents) for each additional 20 words.

From 1852 to 1860 the Government spent 136,863 milreis ($45,165) upon the electric telegraph, of which 68,993 milreis ($22,768) was for salaries and wages and the balance for material. In 1861, nine years after the inauguration of the telegraph in Brazil, the total extension of line was 65 kilometers (about 40 miles), consisting of the Prainha-Petropolis line of 50 kilometers and 15 kilometers of line within the city of Rio de Janeiro. At that time there were 10 telegraph offices and 16 sets of telegraph apparatus in the country.

Decree No. 3519 of September 30, 1865, changed the telegraph tariff of 1860 and made the rate for an ordinary telegram of 20 words sent over a line of 200 kilometers (124 miles) one milreis (33 cents), with a further charge of 500 reis (16.5 cents) for each additional 10 words. This rate increased proportionally for each additional 200 kilometers of line.

From 1865 to 1870 the Empire employed all its resources in carrying on the sanguinary war against the Paraguayan dictator, Francisco Lopez, who had invaded Argentina, Uruguay and Brazil. Robert P.

*One paper milreis (1,000 reis) approximately 33 cents in U. S. currency.

Porter, in his book "The Ten Republics," states that this war cost Brazil £50,000,000 (about $243,-000,000), and adds, "an expenditure which indicates the material progress she had made, since it did not quite ruin her." It was in the second year of the war that Dr. Capanema conceived the idea of having a telegraph train accompany the field forces and to use the telegraph for connecting the military head-quarters in Tuyu-Cué with the advance guards. At the outbreak of the war the Government instructed the Director of Telegraphs to build a line from the capital to Porto Alegre, which line was opened in September, 1866. Later on Rio de Janeiro was placed in telegraphic connection with Tijuca and Botafogo, and the line from the fortress of Santa Cruz was extended to Nictheroy.

Although the rules and regulations stated that the electric telegraph constituted a monopoly of the Government, decree No. 4350 of April 5, 1868, provided for competitive telegraph service by private companies. In accordance with this decree a 20-year concession was granted to F. A. Kieffer for the construction of a telegraph line between Rio de Janeiro and Ouro Preto, with branch lines to Rezende and S. João da Barra.

Under decree No. 4491 of March 23, 1870, Charles T. Bright, E. B. Webb, and William Jones received a 60-year concession to lay a submarine cable to the north and south of Rio de Janeiro, the northern terminal to be the city of Pará (province of Pará) and the southern S. Pedro (province of Rio Grande do Sul), thus practically extending along the entire coast of Brazil. This concession also gave the

syndicate authority to link up its northern cable routes with transatlantic lines to Europe and to the United States of North America. Article 2 of this contract, which was signed by Diogo V. Cavalcanti de Albuquerque, representing the Imperial Government, stipulated that telegraphic connection should be established with the following provinces:

A. To the North: Rio de Janeiro, Espirito Santo, Bahia, Sergipe, Alagoas, Pernambuco, Parahyba, Ceará, Piauhy and Maranhão.

B. To the South: São Paulo, Paraná, and Santa Catharina.

Article 4 provided that the concession should be valid for 60 years from the date of the signing of the contract and that during this period the Government would not permit any other submarine cable to be laid to any point reached by the cable of this syndicate. Article 6 specified that the cable had to be in operation by two years from the date of the signing of the contract. Article 14 declared that at the expiration of the concession the cable and land line plant of the concessionaire should revert to the Brazilian Government "sem indemnisação alguna" (without any indemnity), while in the following article the Government reserved to itself the right to take over the cable after the first ten years of actual operation at a price to be ascertained by arbiters. In 1873 the concession obtained by the syndicate was transferred to the Telegraph Construction & Maintenance Company, Ltd., which in turn transferred it to the Western & Brazilian Telegraph Company.

Telegraph service between Rio de Janeiro and the

provinces of Bahia, Pernambuco and Pará began on December 24, 1875, the first message being sent by the Emperor congratulating the three provinces "por tão fausto acontecimento" (for such a proud achievement).

At this point it is of interest to note that from the beginning of the Government telegraph Dr. Capanema opposed granting concessions for furnishing telegraphic communication to private parties and maintained that the telegraph service should be the exclusive monopoly of the Government. One of the main reasons for his taking this stand was the heavy annual deficits of the telegraph service and his desire to so increase the receipts, which he evidently believed could be done if the Government owned all the telegraph lines, that the Legislature might have no cause for cutting down the large appropriations demanded by the Director General for the rapid extension of the telegraph. Naturally his firm opposition made him unpopular with various business interests who severely criticized him for his lack of good judgment. To combat these attacks Dr. Capanema wrote a series of valuable articles in 1869 which were published in the newspapers of the metropolis in which he refuted the charges brought against his administration and revealed to the public what he termed the shortsightedness of the Government in failing to protect one of its most important monopolies against dangerous private competition.

The report of the Minister of Commerce, submitted to the first session of the Fourteenth Congress of Brazil, gives the extent of the State telegraph plant in 1869 as follows: "We have at present 316½ leagues

(about 1,297 miles) of telegraph besides 40 leagues (164 miles) under construction and 75 leagues (307 miles) already authorized to be built." Up to 1869 the Government had spent 282,000 milreis ($93,000) on the telegraph, an expenditure of 135 milreis ($44.55) per kilometer of line, "preços estos que me parecen muito elevados" (figures that appear to me extremely high). The detailed statistics of the State telegraph at that time were:

	Kilometers of Wire	Number of Offices
City lines	22	11
Line to Petropolis	50	3
Line to lighthouse near Cabo Frio	165	3
Line from Rio de Janeiro to Porto Alegre	1,452	18
Line from Porto Alegre to Pelotas	60	4
Line from S. João da Barra to Campos	340	12
Total	2,089 = 1,297 miles	51

Toward the end of 1870 the Government promulgated decree No. 4653 together with rules relating to the construction and maintenance of telegraph lines along railroads. In accordance with this decree the concessionaire was authorized to construct and maintain the lines and obliged to hand over to the Administration a special wire for the transmission of public messages. The decree also authorized industrial establishments to connect their places of business with the nearest telegraph office.

In the same year the Telegraph Administration, with the approval of the Legislature, published a new rate schedule based upon an ordinary message of 20 words plus one-half of the first charge for each additional 10 words, and also plus certain amounts for the longer distances traversed by a message.

This schedule established the following rates for an ordinary message:

Distance up to	200 kilometers		1 milreis	
From 201	" 400	"	2	"
" 401	" 600	"	3	"
" 601	" 800	"	4	"
" 801	" 1,000	"	5	"
" 1,001	" 1,300	"	6	"
" 1,301	" 1,600	"	7	"
" 1,601	" 2,000	"	8	"
" 2,001	" 2,400	"	9	"
" 2,401	" 2,800	"	10	"
" 2,801	" 3,200	"	11	"
" 3,201	" 3,600	"	12	"
" 3,601	" 4,000	"	13	"
" 4,001	" 4,500	"	14	"
" 4,501	" 5,000	"	15	"

For messages written in a foreign language or in cipher, and also for preferred or urgent telegrams, twice the ordinary rates were charged. This rate scheme remained in force until 1881.

The report presented to the Brazilian Congress of 1871 by the Minister of Commerce, reviewed the progress of the telegraph since its origin, and concluded as follows: "It is well known that only after 1864 did the construction of telegraph lines in Brazil receive any encouragement, but it is equally true that, so far, we have done very little with this service when we consider that the telegraph is a public service which plays an important rôle in the promotion of commerce and good government and whose advantages are recognized by all civilized countries. Consequently, despite our drawbacks, we should try to make up for the time lost."

Meanwhile, in the neighboring republics of Argentina and Uruguay the telegraph had rapidly developed so that their lines approached close to the frontiers of Brazil and made international telegraphic

communication highly desirable. The first international telegraph line was constructed by an English firm and extended from the boundary of Uruguay to Jaguarão, Brazil. Soon afterward another concern laid a cable to the city of Rio Grande. In 1871 the Telegraph Administration finished a line to Curityba (province of Paraná) and also one connecting Pelotas and Porto Alegre (province of Rio Grande do Sul). The Jaguarão office, at the southern frontier of Brazil, was opened for service October 29, 1871.

The most important event of the following year was the granting of a 20-year concession, by decree No. 5058 of August 16, 1872, to Baron de Mauá to lay and operate a submarine cable between Brazil and Portugal and the Portuguese possessions, thus establishing direct telegraphic communication between Brazil and Europe. The contract drawn up between Baron de Mauá and Viscount de Itaúna, representing the Emperor of Brazil, stipulated that the cable should start from the Cape of S. Roque (province of Rio Grande do Norte) and should go via Cape Verde Islands and Madeira to Lisbon. By decree of June 18, 1873, Baron de Mauá was permitted to transfer this concession to the Brazilian Submarine Telegraph Company, Ltd. The latter arranged with the Telegraph Construction and Maintenance Company, Ltd., to perform the work of laying the cable, and service was inaugurated in July, 1874.

During 1873 the telegraph was extended to the city of Itapemirim (province of Espirito Santo) which also made possible the continuation of that

line to Maceió (province of Alagoas) in northern Brazil. The gain in important telegraph lines in the south is noteworthy, the branch from Santos to S. Paulo being of particular importance. During the next year the Government continued its policy of providing telegraph lines to northern Brazil, the Victoria (province of Pernambuco) office being opened February 26th and those at Bahia (province of Bahia) and Aracajú (province of Sergipe) on November 8th of the same year.

Active construction work continued during 1875, the telegraph reaching the capital of the province of Parahyba in that year and in the year following was extended to the province of Rio Grande do Norte. By the end of 1879 thirteen of the twenty provinces of the Empire were in telegraphic communication with the capital and in 1881 communication was established with Fortaleza (province of Ceará).

By decree No. 8354 of December 27, 1881, the Administration again introduced a new telegraph tariff which established a charge of 100 reis (3.3 cents) per word, counting 10 letters as one word, for a domestic message and a unit distance of 400 kilometers (248 miles). While the new tariff decreased the cost of ordinary messages over comparatively short distances, it greatly increased the cost of telegrams over longer hauls, such as that between the capital and Belem, a line distance of about 5,000 kilometers ((3,105 miles). This fact is commented upon in the 1899 Relatorio, where it is stated that the cost of such a message, figured on the 1881 tariff, amounted to 26 milreis ($8.58). This tariff was retained until the fall of the Empire in

1889 and was modified by decree No. 372A, issued by the Provisional Government on May 2, 1890.

By 1884 the telegraph had been completed to S. Luiz (province of Maranhão). By order of the Emperor, Don Pedro II, the telegraph stations included on this line were opened to the public on December 14, 1884. The day before the inauguration of the service, Dr. Capanema, Director General of Telegraphs, with the assistance of D. Eduardo Jones, Manager of the Uruguayan telegraphs, arranged to have a message sent from Therezina (province of Piauhy) via S. Luiz to Montevideo, a distance of 9,700 kilometers (6,023 miles). The experiment proved an entire success, the message taking only six minutes to pass between the two terminal points. Due to the satisfactory transmission over this trial line the Director General of Posts and Telegraphs of Argentina ordered direct telegraphic connection to be established between Rio de Janeiro, Montevideo and Buenos Aires.

Another important work executed under the supervision of Dr. Capanema was the construction of a line to Pará (or Belem), the terminus of the submarine cable that was to connect Brazil with the United States of North America. This line was finished October 13, 1886.

Except for the construction of some branch lines connecting various cities along the coast of Brazil, nothing of importance was done in connection with the telegraph service during the year prior to the fall of the Empire and the establishment of the Republic.

The "Memoria Historica" states that the conditions which confronted the Director General during

the last years prior to his retirement became more and more unsatisfactory and that, despite the many years of incessant toil, the old Director General, who had earned the proud title of "Father of the Brazilian Telegraphs," saw his best efforts prejudiced because the Republican Government failed to provide the necessary funds for new lines and proper maintenance of the existing plant which was rapidly deteriorating. Moreover, his authority as managing director was frequently weakened or overridden by the promotion of incompetent persons over the heads of the thoroughly competent and well-trained old employees. At the same time the volume of traffic of unwarranted official free messages frequently assumed such proportions as to seriously interfere with the transmission of private paid telegrams, and the consequent delay in their delivery led to many bitter complaints by the general public. In addition, the ever increasing number of official messages steadily reduced the telegraph revenue which was also detrimentally affected by the competition of the private railroads and the powerful English cable companies. Consequently, the annual telegraph deficit rose higher from year to year. Finally, the telephone service, which the Government should have developed as a feeder to the National telegraph revenue, had been entirely abandoned to private interests who frequently obtained unwarranted concessions. According to the writer of the "Memoria Historica" these conditions caused Dr. Capanema to resign and thus avoid a clash between his own well-established method of managing the telegraph and the antagonistic methods advocated and enforced

by those at the head of the Republican Administration.

STATISTICS OF THE BRAZILIAN TELEGRAPH

1861-1889

Year	Kilometers of Wire	Number of Stations	Number of Telegrams	Gross Revenue (milreis)	Annual Deficit* (milreis)
1861......	65	10	233	328	41,000
1865......	187	23	3,088	6,293	534,000
1870......	2,089	51	44,775	127,829	207,000
1874......	6,286	81	103,689	252,745	1,445,000
1881......	13,000	135	383,147	1,241,770	390,000
1882......	13,249	136	338,053	1,220,182	660,000
1883......	13,651	139	331,884	1,039,932	739,000
1884......	15,262	159	367,779	1,345,203	764,000
1885......	18,197	171	390,277	1,219,794	1,381,000
1886......	18,311	171	656,575†	1,789,939†	1,078,000†
1887......	18,363	170	......	....	....
1888......	18,488	173	521,886	1,304,207	729,000
1889......	18,925	182	637,382	1,968,649	309,000

*Includes capital expenditures.
† Includes second half of 1887.

The Telegraph under the Republic, 1889-1921

The Republic of Brazil was established on November 15, 1889, under the military dictatorship of Marshal de Fonseca amidst civil contention and a severe financial and economic crisis. Through the emancipation of the slaves under the former Emperor the country had been plunged into a state of disorder which in 1892 culminated in a revolution lasting in the province of Rio Grande do Sul until July, 1895.

The change of government introduced more modern ideas concerning the management of all public services, including the telegraph as is illustrated by decree No. 199 of February 6, 1890, which cedes to the municipality of Rio de Janeiro the telephone

service within its boundaries. Unfortunately, however, decree No. 372A, issued the following May, flatly contradicted the disposition of the February decree by providing in article I that both the telegraph and telephone lines in the territory of the Republic, built for service to be furnished either by the Administration or by private parties, are the property of the Government. The legislative tangle was finally straightened out by article 7, paragraph 4, and article 9, paragraph 4, of the new constitution, adopted on February 24, 1891, which authorized the States comprising the Union to construct telegraph lines, not only within their own territory, but also to points in adjacent States not reached by the Federal telegraph, provided, however, that all such lines might be acquired later on by the Federal Government. The new constitution also established the absolute sovereignty of municipalities over the electric, traction, light and power services.

For a clear understanding of the powers granted by the constitution both to the Federal Government and to the States in regard to legislation upon matters pertaining to the telegraph and telephone services, the following paragraph, written by a leading Brazilian lawyer in answer to a request for a correct interpretation of articles 7 and 9, is quoted.

"In regard to the competency of the Federal and State Governments to legislate upon this matter it is clear that both have this power, which, however, cannot be exercised concurrently. It evidently was the intention of the Brazilian legislators not to give the Union the monopoly of such services for fear such monopoly would tend to discourage the development of these public utilities in a country of such

vast area. For this reason the power given to the Union by article 7, paragraph 4, to make rates for the Federal telegraph was also extended to the States by article 9 which reads: 'the States possess also the exclusive right to make rates for their own telegraph lines,' while paragraph 4 of the same article reads: 'the right to establish telegraph lines between points within their own territory and likewise to points within other States not served by telegraph lines is reserved to the States; however, the Union may take possession of such lines in the interest of the general welfare of the country.' In other words, although the States of the Union have the right to establish telegraph systems within their own territory or with neighboring States, such right cannot be exercised in conflict with the Federal power."

No change occurred, however, in the policy of the Government to oppose the interconnection of neighboring States by private lines, which opposition was based on the ground that such concessions would interfere with the National telegraph system, reduce the earnings of the Government lines, and afford means of communication over which the Government would not have the control it desired to maintain. While this policy did not restrict to any appreciable extent the construction of private telegraph lines, of which by far the majority served the operation of railroads, the same policy, when applied to the telephone, prevented and suppressed the building of interstate long distance lines thus hindering the development of one of the most efficacious means of advancing the commercial life of a nation.

As this subject will be taken up in the chapter dealing with private telephone service, it suffices to state here that it was through the efforts of the Rio

de Janeiro Tramway, Light and Power Company, Limited, that the Federal authorities decided in 1909 to refer the entire matter to the Brazilian Congress with the understanding that the latter would dispose, not only of the petition then pending to interconnect the Federal District telephonically with the State of Rio de Janeiro, but would pass such legislation in the treatment of this particular case as to definitely settle the matter of interstate telephone communication. Such legislation was duly enacted and by removing the former interstate restrictions made possible the direct connection of the principal commercial centers of Brazil by telephone.

Shortly after the establishment of the Provisional Government, which lasted from November 15, 1889, to January, 1891, that body considered it advisable to connect the States of Goyaz and Matto Grosso with the National telegraph, and for this purpose instructed the Telegraph Administration to install telegraph offices at Goyaz and Cuyaba, where service was inaugurated October 1, 1890, and December 31, 1891, respectively.

The budget for the year 1890 also carried an appropriation of 1,500 contos* ($495,000) for the construction of a telegraph line between Belem (State of Pará) and Manaos (State of Amazonas). Work was started and continued for one year when, after an expenditure of 1,000 contos ($330,000) operations were suspended due to the lack of funds in the National Treasury.

Desiring to popularize the telegraph service, the Provisional Government issued decree 372A of

* One conto (1,000 paper milreis) approximately $330 in U. S. currency.

May 2, 1890, which reduced the rate for a domestic telegram to 70 reis (2.3 cents) per word, a word not to exceed 15 letters, and also authorized a 50% reduction in the regular rate for press messages. An annual charge of 10 milreis ($3.30) for the telegraphic registration of addresses was an innovation introduced at this time.

Of far-reaching importance for the development of the commerce of the country was the determined effort of the Provisional Government to provide additional cable facilities. By decree No. 944 of November 1, 1890, the Western and Brazilian Telegraph Company, Ltd., received permission to lay a second coastal cable to the north and south of the capital. In furtherance of the same policy the Provisional Government advertised that it was ready to receive bids for the laying of a submarine cable connecting Brazil with the United States of North America, with the result that the Société Générale des Téléphones and the Société Française des Télégraphes Sous-Marins received a 25-year concession by decree No. 216A of February 22, 1890. This contract provided that Vizeu (State of Pará) should be the starting point, but subsequently, with the permission of the Government, the licensee transferred the starting point to a place near Salinas, also in the State of Pará. Service over this route began Spetember 1, 1892.

Additional cable facilities were provided by decree No. 128 of April 11, 1891, whereby the Provisional Government granted a 25-year concession to William Parsoné, representing the India Rubber, Gutta Percha and Telegraph Works Company, Ltd., of

London, for the laying of a cable, or cables, between Pernambuco (State of Pernambuco) and St. Louis in Senegal, Africa, this cable to touch at the Island of Fernando do Noronha. Decree No. 965A of June 30, 1892, transferred this concession to the South American Cable Company, Ltd., an English concern registered July 4, 1891, which, under an agreement with the former concessionaire, acquired the 2,165 miles of cable already laid.

That the change of Government caused a remarkable expansion of Brazilian commerce and industries is shown by the increase in telegraph traffic during the 10-year period 1890–1899 as compared with the preceding decade. From 1880–1889 the average yearly number of telegrams was approximately 420,000, and the largest number of messages in a single year was 657,000 in 1887, while during the period 1890–1899 the average number of telegrams per year was 1,290,000 (over three times the volume in the previous decade), with the largest number of messages in a single year 1,722,000.

To take care of the increased traffic the Telegraph Administration equipped a number of the great trunk lines with additional wires. However, despite such increased facilities the service did not improve because, as the writer of the "Memoria Historica" states, the trouble was not due to lack of wires, but to imperfect and bad transmission which resulted in an average transmission of scarcely three words per minute. Naturally, the Administration turned its attention to the use of rapid telegraph systems and in 1897 installed Baudot apparatus on the line between Rio de Janeiro and S. Paulo.

The success attained with this system led to the general use of Baudot apparatus on the line between Rio de Janeiro and Recife (State of Pernambuco) a distance of 1,800 kilometers (1,118 miles) and also between Rio de Janeiro and Porto Alegre (State of Rio Grande do Sul). A further improvement in the service was brought about by the use of the Hughes Printing Telegraph.

Decree No. 2000 of April 2, 1895, signed by the first civil president of Brazil, Prudente J. de Moraes Barros, granted a 30-year exclusive concession to Richard J. Reidy, as the representative of the Amazon Telegraph Company, Ltd., for the establishment of telegraphic communication through a subfluvial cable between the capitals of Pará and Amazonas, the two most northern States of Brazil. The cable was constructed and laid by Siemens Brothers & Company, Ltd., at a cost of £211,000 ($1,027,000) and was completed in February, 1896, with a total length of 1,365 miles. In later years when the laying of a second cable between Belem and S. José de Amatary became imperative in order to guard against the frequent interruptions to the service, the Government extended the life of the contract to April 2, 1945.

Upon the enactment of law No. 391 of October 7, 1896, a dispute of long standing between the Administration and the privately owned and operated railroads furnishing public telegraph service was terminated. This contention originated in 1870 when the Government issued decree No. 4653 with rules and regulations for the construction and maintenance of telegraph lines along railroads. In the memoir accompanying the decree the Minister had advised

the Government that in the interest of the State telegraph service the railroads should be called upon to cede to the Administration one conductor on each of their telegraph lines. As the railroads reached many places at a considerable distance from the then existing State telegraph offices it was evident that by making this proposal obligatory the State telegraph could gain a large number of offices and lines without any expense to the National Treasury. Nothing was done until 1878 when the Legislature passed decree No. 6995 which established the basis for the granting of railroad concessions and which authorized the Government to use the poles of the railroad telegraph lines for a State telegraph wire, which was to be maintained by the railroad companies. As this law put a heavy burden on the companies it was changed in 1881, eliminating the provision compelling the companies to maintain the State owned wire, and providing in its place that the companies should grant to the Government the use of one wire on each railroad telegraph line. This obligation, however, was not fulfilled on the part of the companies. Moreover, relying upon the terms of their concessions, the railroads gradually became sharp competitors of the State telegraph and diverted a considerable volume of traffic from the State lines by offering to the public service at rates lower than those charged by the Telegraph Administration. After various attempts to settle this unsatisfactory condition the Government, on October 7, 1896, enacted law No. 391 by which all railroad telegraph lines became an integral part of the Federal Telegraph. This act stipulated that the traffic over

railroad telegraph lines, including the rates to be charged, was to be governed by the rules and regulations of the Telegraph Administration.

The years 1895 to 1907 constitute a period during which the Telegraph Administration made a continuous effort to find a rate system which would lower the constantly recurring heavy deficits produced by this branch of the public service, and at the same time induce the public to make a far more extensive use of the Federal Telegraph. Bearing in mind the tremendous area of Brazil and consequently the need of providing extremely long and costly trunk lines, often built through vast and almost uninhabited regions, it is evident that the task of elaborating a tariff system which adequately covered the cost of what may be termed a short and a long haul telegraph message was one that required the exertion of the utmost ingenuity on the part of the Legislature and therefore many tentative rate schedules were tried, the most important of which are the following:

Law No. 359 of December 30, 1895, which reduced to 60 reis (2 cents) the rate per word, provided a basic charge of 400 reis (13.2 cents) per telegram, and made the total charge of a message dependent upon the number of zones through which it passed, each State of the Federation constituting a telegraphic zone.

Law No. 391 of October 7, 1896, conceded a reduction of 50% to telegrams sent by State officials, and law No. 428 of December 10, 1896, granted press messages a reduction of 75% of the ordinary rate.

Law No. 741 of December 26, 1900, reduced the rate per word from 1.50 francs (30 cents) to 1 franc (20 cents) for international telegrams exchanged between the Republics

south of Brazil with its northern zone, and to 0.50 francs (10 cents) for the same class of messages exchanged with the zone south of the capital.

Law No. 813 of December 23, 1901, authorized the Government to introduce deferred messages at greatly reduced rates. The schedule for this class of telegrams was published in 1902 and ranged from 80 reis (2.6 cents) per word for a telegram passing through but one State to 530 reis (17.5 cents) per word for a message traversing the entire 16 States of the Federation.

Law No. 1616 of December 30, 1906, abolished the use of deferred messages and adopted the following rates for domestic telegrams:

100	reis	per	word	for	a	message	within 1 State.			
200	"	"	"	"	"	"	passing	through	2	States.
300	"	"	"	"	"	"	"	"	3	"
400	"	"	"	"	"	"	"	"	4	"
500	"	"	"	"	"	"	"	"	5	" or more.

Law No. 1837 of December 31, 1907, which reduced the five rate classes of the 1906 law to three, was as follows:

100	reis	per	word	for	a	message	within 1 State.		
200	"	"	"	"	"	"	passing	through	2 or 3 States.
300	"	"	"	"	"	"	"	"	4 or more States.

As an item of historical interest the celebration in 1902 by the Telegraph Administration of the 50th anniversary of the inauguration of the first telegraph line by Dr. Capanema deserves mention. It is also of interest to note that in 1904 the exchange of a telegram by Morse apparatus took place between Rio de Janeiro and Chile over the Trans-Andine line, a distance of about 7,000 kilometers (4,347 miles), and in 1906 the operation by Baudot rapid telegraph apparatus of the great trunk line between Rio Grande and Fortaleza, a distance of about 5,500 kilometers (3,415 miles).

Except for the development of the radiotelegraph and State telephone service, which subjects are

treated in separate chapters, the Telegraph Administration directed its efforts from 1907 to the outbreak of the World War in 1914 largely to the further expansion of the Federal lines, the betterment of the living conditions of the employees, and the reorganization of the staff with a view of cutting down the annual expenses of the service.

Early in 1908 an important strategical line was started to connect the States of Matto Grosso and Amazonas. This is a fair example of similar long and costly lines which the Federal Administration felt required to build through the almost uninhabited regions of the distant States. In his annual report for 1908 to the Minister of Ways and Public Works, the Director General, Luiz van Erven, in speaking of the above line states that the majority of the laborers employed on the branch lines had been so badly affected with malaria that they had to be laid off, and that the gang working on the main line, under the direction of Lieutenant Colonel Candido Rondo, had been attacked by the Indians who had fled from their villages at the approach of the construction gang. Only the liberal distribution of gifts prevented serious loss of life and induced the warring Indians to return to their homes.

Aside from the long interruption of 246 days in telegraphic communication between Belem and Manáos, owing to the breaking down of the Amazon River cable, the year 1908 is noteworthy in the history of the Brazilian telegraph because during that year the Government granted to a German firm an important concession for laying a cable between the coast of Brazil and the Island of Teneriffe, connect-

ing at that point with the cables of the South American Cable Company to West Africa. Thus Brazil obtained a new telegraph route to Central Europe and South America with a subsequent substantial reduction in the transatlantic cable rate. This concession was transferred to the Deutsch-Südamerikanische Telegraphengesellschaft by decree No. 7598 of October 14, 1909.

In October of the year 1909 the Government granted a concession to Richard J. Reidy for laying a cable between Belem and Nictheroy and from Nictheroy to Chuy. This concession was opposed by the Western Telegraph Company which demanded that it should be cancelled, and finally, by decree No. 10819 of March 18, 1914, the concession was declared forfeited.

During 1910 the Telegraph Administration at last completed a task of long standing, the revision of the rules and regulations established by decree No. 4053 of June 24, 1901. It had been evident for years that the salary expense incident to the management of the telegraph had been exorbitant, due largely to the number of superfluous highly paid officials. The new rules and regulations divided the service into four groups or sections, each in charge of a sub-director, and eliminated among others the positions of Vice General Director, Assistant Chief of the Technical Section, and Assistant Treasurer.

The subsequent two years, 1911 and 1912, were rather uneventful as far as the telegraph was concerned, the most important events being the opening of transatlantic service over the cable of the Deutsch-Südamerikanische Telegraphengesellschaft on March

29, 1911, and by decree No. 9616 of June 13, 1912, the introduction of deferred international telegrams at a 50% reduction from the ordinary rate.

To satisfy the demands of the business people who were continually asking for cheaper service, the Legislature in authorizing the appropriation bill for 1913 again reduced the rates, making the basic charge for a domestic telegram 500 reis (16.5 cents) and creating two rates of 100 and 200 reis respectively (3.3 and 6.6 cents) for a message passing through one or more than one State.

The immediate result of this reduction in the rates was a heavy increase in the telegraph deficit in 1914 over that in 1913, the 1914 figure totalling 9,840 contos ($3,247,000) as compared with 9,282 contos ($3,063,000) for the preceding year. Concerning the loss in revenue, the Director General in his annual report to the Minister of Ways and Public Works writes: "The main cause of the decrease of the gross receipts is to be ascribed to the extremely low rates and the fact that there did not occur the expected corresponding increase in traffic."

During the first year of the World War the Brazilian Telegraph Administration, as well as similar departments of all other South American Republics, was forced to restrict its efforts primarily to the maintenance of the existing plant which in itself was a difficult problem as all the sources of European supplies had been cut off and the price of domestic material had increased enormously. Moreover, due to the disruption of general business the Government was obliged to exercise the strictest economy in all public services. Despite these con-

ditions, the Director General, Euclides Barroso, in his annual report for 1915 was able to assure the Government that the plant had been maintained in perfect working condition.

During the third year of the World War the Brazilian Government issued decree No. 3296 of July 10, 1917, which made the radiotelegraph and radiotelephone services the exclusive monopoly of the Federation and established definite rules and regulations for these services. In connection with the 1917 annual report the Telegraph Administration published for the first time a complete list of the concessions granted by the Government since 1870 to companies and private parties for submarine and subfluvial cables. This is one of the most valuable sources of information available on that subject.

Although the Telegraph Administration has not issued an annual report since 1918, it appears from the last Message of the President to the Brazilian Congress, May 3, 1921, that the financial returns from the State telegraph service have greatly improved during the past 2 or 3 years. The following paragraphs are taken from this document:

"The telegraph system of Brazil reached on December 31, 1920, a development of 44,534 kilometers (27,655 miles) of pole lines with 79,791 kilometers (49,550 miles) of wire conductors. An examination of our telegraph map shows that the system is more compact in the States of Rio Grande do Sul, Minas Geraes, and Rio de Janeiro than in northern Brazil. The central part, being less populated, needs fewer lines, though there are in Matto Grosso about 4,500 kilometers (2,794 miles) and in Goyaz 1,552 kilometers (963 miles) of wire. The inhabited parts of the States of Pará

and Amazonas use subfluvial lines and the radiotelegraphic stations, which render a great service to the inhabitants of the Territory of Acre.

STATISTICS OF THE BRAZILIAN TELEGRAPH
1890-1920

Year	Kilometers of Wire	Number of Stations	Number of Telegrams	Gross Revenue (milreis)	Annual Deficit (milreis)
1890......	20,299	212	750,621	2,042,755	841,000
1891......	28,268	233	1,001,535	2,765,899	909,000
1892......	31,229	256	1,151,689	3,127,079	2,048,000
1893......	34,251	272	1,132,432	3,256,873	2,830,000
1894......	35,494	306	1,280,824	3,694,501	4,084,000
1895......	37,218	338	1,469,404	3,915,538	4,997,000
1896......	39,779	379	1,667,026	4,613,447	4,715,000
1897......	40,138	372	1,724,192†	4,857,760	3,356,000
1898......	40,232	371	1,380,528	6,666,917	434,000
1899......	40,352	366	1,371,914	6,970,955	535,000
1900......	41,677	390	1,353,675	6,819,307	642,000
1901......	42,254	403	1,163,522	5,804,312	1,708,000
1902......	44,640	426	1,201,849	6,141,276	1,490,000
1903......	47,359	471	1,373,974	6,722,858	1,112,000
1904......	49,384	488	1,524,987	7,347,003	612,000
1905......	49,776	513	1,538,885	7,166,696	1,410,000
1906......	51,286	531	1,745,848	8,097,172	2,045,000
1907......	53,059	546	1,929,706	7,757,683	3,376,000
1908......	54,817	578	2,249,586	7,847,584	4,270,000
1909......	56,086	597	2,438,324	8,309,981	3,799,000
1910......	57,140	630	2,788,906	9,748,017	3,326,000
1911......	60,848	672	2,836,836	10,919,533	6,836,000
1912......	61,681	717	3,680,026	12,257,687	7,589,000
1913......	63,968	740	3,790,294	11,363,056	9,840,000
1914......	68,082	752	3,974,562	11,403,075	9,282,000
1915......	67,354	729	3,650,590	14,378,547	3,507,000
1916......	70,439	748	3,930,144	15,701,669	2,892,000
1917......	72,012	801	4,405,450	17,298,351	1,968,000
1918......	72,658	857*	5,350,000*	19,000,000*	....
1919......	76,000*	914*	5,900,000*	20,800,000*	....
1920......	79,791	971	6,493,689	22,625,642	....

* Estimated.
† For years subsequent to 1897 international telegrams are included.

"In 1920, 6,493,689 telegrams of 127,327,724 words were sent and in 1915 only 3,487,670 telegrams of 65,970,808 words, indicating that the traffic has doubled in the space of five years.

"Last year 1,114 kilometers (691 miles) of lines were built and 26 telegraph stations were opened for traffic. The 971 telegraph stations of Brazil produced last year a revenue of 22,625,641 milreis ($7,466,000) of which 5,897,055 milreis ($1,946,000) represents the value of official messages.

"22,224,760 milreis paper ($7,334,000) and 300,000 milreis gold ($163,800) were expended during the past fiscal year for the conservation of the National telegraph. After deducting the cost of material purchased for the construction of new lines one can say that the revenue of the telegraph in Brazil covered the expenses. Five years ago, in 1914, the gross revenue of the telegraph was not half of what it was in 1920, while in addition, the expenses in 1914 were 20,685,144 milreis ($6,826,000) with the revenue (excluding miscellaneous receipts) 10,905,185 ($3,598,000) resulting in a deficit of nearly 100% of the revenue."

"Gross Revenue" consists of revenue from paid domestic and international telegrams, value of official telegrams, radiotelegraph receipts, State telephone revenue, and miscellaneous receipts.

"Annual Deficit" is largely due to the inclusion in expenditures of amounts spent yearly for new construction and material. Deducting this item, the telegraph revenue would cover expenses.

CABLE SERVICE

At the outbreak of the World War in 1914 the Republic of Brazil had four separate cable routes connecting it with the outside world, as follows:

1. Madeira Line. The Madeira line is operated by the Western Telegraph Company, Ltd., which was registered at London January 8, 1873, as the Brazilian Submarine Telegraph Company, Ltd., the name being changed on November 10, 1899, to the Western Telegraph Company, Ltd. This cable starts from Recife (State of Pernambuco) and goes via Cape Verde Islands and Madeira to Carcavellos

(near Lisbon, Portugal). The first cable connecting these points was laid in 1874 and had a length of 3,750 nautical miles. A second, laid in 1884, shortened the distance to 3,657 nautical miles. The Western Telegraph Company, Ltd., also owns and operates a number of submarine coastal cables between the cities of Pará, Maranhas, Ceará, Pernambuco, Bahia, Rio de Janeiro, Santos, Florianopolis and Rio Grande. From the latter city the cable goes to Montevideo (Uruguay). The longest of these cables are from Pará to Pernambuco, with 1,242 nautical miles, and another of 1,367 nautical miles from Pernambuco to Rio de Janeiro, both laid in 1900.

2. Fernando Noronha Line. By decree No. 128 of April 11, 1891, the Brazilian Government granted a concession to the India Rubber, Gutta Percha and Telegraph Works Company, Ltd., for the laying of a cable between Pernambuco and Senegal (Africa). Decree No. 965A of June 30, 1892, permitted the concessionaire to transfer his rights to the South American Cable Company, Ltd., registered at London July 4, 1891. The cable starts from Recife, touches at the Island of F. Noronha, and then continues to Dakar (Senegal). The length of this cable, which was laid in 1892, is 348 nautical miles from Recife to F. Noronha and 1,620 nautical miles from F. Noronha to Dakar, making a total length of 1,968 nautical miles.

3. Salinas Line. This cable is operated by the Compagnie Française des Cables Télégraphiques which received a concession from the Brazilian Government by decree No. 216A of February 22, 1890, authorizing the Société Générale des Télé-

phones and the Société Française des Télégraphes Sous-Marins to establish telegraphic connection between the city of Vizeu (State of Pará) and the coast of the United States of North America. The life of the concession was for 25 years. At Santiago de Cuba this cable connects with those of the West India and Panama Telegraph Company and at Guantanamo (Cuba) connects with the cables of the All America Cables system which go to New York. This line was opened for service on September 1, 1892. The most important routes operated by the Compagnie Française des Cables Télégraphiques are:

Salinas to Cayenne (Fr. Guiana)	505	nautical miles
Cayenne to Paramaribo (Dutch Guiana)	268	" "
Paramaribo to Fort de France (Martinique)	700	" "
Fort de France to Charlotte-Amélie (St. Thomas)	372	" "
Charlotte-Amélie to Puerto Plata (Dominican Republic)	409	" "
Puerto Plata to Cap Haitien (Haiti)	116	" "
Cap Haitien to St. Nicholas (Haiti)	96	" "
St. Nicholas to Guantanamo (Cuba)	119	" "

4. Teneriffe Line. This cable formerly belonged to the Deutsch-Südamerikanische Telegraphengesellschaft which prior to the World War operated five cables with a total length of 7,386 nautical miles. The original concession was granted by decree No. 7,051 of July 30, 1908, to Felten & Guilleaume-Lahmeyerwerke Actien-Gesellschaft. A second decree (No. 7598 of October 14, 1908) permitted the concessionaire to transfer his rights to the Deutsch-Südamerikanische Telegraphengesellschaft. The route of the cable was:

Island of Borkum (near Emden) to Teneriffe (Canary Islands)	2,107	nautical miles
Teneriffe to Monrovia (Liberia, Africa)	1,798	" "
Monrovia to Pernambuco (Brazil)	1,873	" "

Service over this route commenced on March 29, 1911.

In none of the South American countries having an extensive seacoast was the early need of rapid telegraphic intercommunication between the important commercial cities felt more intensely than in Brazil, where the Atlantic Ocean forms the natural boundary on the east and also on the north for a distance of about 5,000 miles from the frontier of Dutch Guiana to the boundary line of Uruguay.

The Telegraph Administration of Brazil fully recognized the importance of providing rapid telegraphic communication between the coastal cities and the capital, but was deterred by the enormous expense of constructing land lines over such vast distances with difficult engineering problems to be met. The need for submarine cables became more and more pronounced as the commerce and industries of these seacoast cities increased by leaps and bounds, making such inland lines as had been built entirely inadequate to take care of the volume of telegraphic traffic. Consequently, when various foreign interests proposed to the Government the interconnection by submarine cables of the capital with important seacoast cities to the north and south their offer was readily accepted, for at that time the country was not financially able to do the work itself. It is certain, however, that if the Government had foreseen the injurious competition which later developed between the submarine cable companies and the established inland telegraph lines, the granting of permits for the laying of such cables would have been more narrowly restricted than it was.

It has been stated in the beginning of this chapter that at the present date of writing the Western Telegraph Company, Ltd., owns and operates not only the Madeira cable but also the various coastal cables to the north and south of Rio de Janeiro, and also that prior to 1899 this company was known as the Brazilian Submarine Telegraph Company, Ltd. In that year, by decree No. 3307, the Brazilian Government authorized the amalgamation of the Brazilian Submarine Telegraph Company, Ltd., with the Western and Brazilian Telegraph Company, Ltd., the new company being called the Western Telegraph Company, Ltd. Through such amalgamation the latter company became the owner of two basic concessions granted by the Government of Brazil, namely, the concession granted by decree No. 4491 of March 23, 1870, to Charles T. Bright, and the one granted by decree No. 5058 of August 16, 1872, to Baron Mauá.

The subsequent data have been added to show through how many companies these concessions passed until they were finally combined under the management of the Western Telegraph Company, Ltd.

Decree No. 4491 of March 23, 1870, granted to Charles T. Bright, E. B. Webb, and William F. Jones a 60-year exclusive concession to lay and operate two submarine cables, both starting from the capital, one extending north to Pará (province of Pará) and the other south to S. Pedro (province of Rio Grande do Sul).

Decree No. 5234 of March 24, 1873, authorized the transfer of the original concession (decree No. 4491) to the Telegraph Construction and Maintenance Company, Ltd.

Decree No. 5270 of April 26, 1873, authorized the renewal of the contract made with Charles T. Bright and others, and transferred to the Telegraph Construction and Maintenance Company, Ltd., for the construction of submarine cable lines to the north and south of the capital. Attached to decree No. 5270 were new stipulations concerning the time limit for establishing cable communication between the capital and the northern and southern terminals.

Decree No. 5489 of December 10, 1873, authorized the Western and Brazilian Telegraph Company, Ltd., to do business in Brazil.

Decree No. 5359 of January 31, 1874, approved the transfer to the Western and Brazilian Telegraph Company, Ltd., of the concession granted to the Telegraph Construction and Maintenance Company, Ltd.

Decree No. 5545 of February 7, 1874, authorized the Western and Brazilian Telegraph Company, Ltd., to extend the submarine cable from the city of Pará to Cayenne (French Guiana) and Surinam. Work must be commenced within 5 months and be entirely finished within 7 years.

Decree No. 5971 of July 21, 1875, authorized the West India and Panama Telegraph Company, Ltd., to operate in Brazil, and accepted the transfer to this company of the concession granted by decree No. 5545 to the Western and Brazilian Telegraph Company, Ltd.

Decree No. 6874 of April 6, 1878, extended the time limit for finishing the submarine cable line to northern Brazil, as stipulated in decree No. 5270.

Decree No. 7105 of December 3, 1878, again extended the time limit, this time for six months from October 6, 1878.

Decree No. 7814 of August 31, 1880, granted a concession to the Western and Brazilian Telegraph Company, Ltd., to extend its submarine cable from Pará to the Guianas (see decree No. 5545).

Decree No. 9184 of April 12, 1884, declared the concession granted by decree No. 7814 forfeited.

Decree No. 944 of November 1, 1890. The Provisional Government granted a concession to the Western and Brazilian Telegraph Company, Ltd., to lay a second submarine cable along the coast of Brazil, following the route of the cable already laid.

Decree No. 3307 of June 6, 1899, authorized the amalgamation of the Brazilian Submarine Telegraph Company, Ltd., and the Western and Brazilian Telegraph Company, Ltd., the new company to be known as the Western Telegraph Company, Ltd.

The Western Telegraph Company, Ltd., therefore holds all the rights and privileges granted under decree No. 5270 of April 26, 1873, and decree No. 944 of November 1, 1890.

Decree No. 3557 of January 16, 1900, authorized the Western Telegraph Company, Ltd., to do business in Brazil.

WIRELESS TELEGRAPH

In 1902 Joaquim Gonçalves de Lalor, an engineer acting as representative for R. Mardock, a citizen of the United States, applied to the governors of the States of Pará and Amazonas for a concession permitting him to install wireless telegraph stations along the rivers Tocantine, Purús, Madeira and Amazonas, and cited in support of his request the frequent interruptions of telegraphic communication between the coast and these States because of the faulty working of the submarine cable operated by the English company. R. Mardock, through J. G. de Lalor, received such concession in 1904 and transferred it to the Amazon Wireless Telegraph and Telephone Company, a corporation chartered in the State of Maine, U. S. A. This company erected wireless stations in 1905, using the Fessenden system, in Pinheiro (about 11 miles from Belem) and at

Breves (about 80 miles from Pinheiro). On account of imperfect transmission the Breves station was dismantled in the following year and the Pinheiro station was moved to Belem. At the same time the system invented by Shoemaker and Stone was installed in place of the Fessenden system. Having succeeded in securing this concession from the States of Pará and Amazonas, J. G. de Lalor asked the National Congress for authority to establish wireless service between these two States. The Chamber of Deputies referred the petition to a commission which on August 2, 1905, reported adversely on the ground that such concession would interfere with the telegraph monopoly of the Federation. Despite this adverse report the American company continued its work in the State of Pará and installed another wireless station at Santarem, about 460 miles from Belem, which distance, however, proved to be too great for maintaining regular service between these two points.

In 1905 José L. L. de Souza requested the Government for a 50-year concession to establish wireless stations within the entire territory of the Republic, which petition was rejected, owing to objections raised by the State Telegraph Administration.

Various other requests like the foregoing at last called the attention of the Brazilian legislators to the fact that no law had yet been enacted governing the installation and use of wireless stations within the National territory. To clarify this situation Dr. Gracho Cardoso, member of the Chamber of Deputies from the State of Ceará, presented a bill to the Legislature on November 6, 1907, as follows:

"Article 1: The installation of wireless apparatus and

the exploitation of that service is the exclusive monopoly of the Government:

"Article 2: Concessions may be granted to the States, or to private parties, for the installation and operation of wireless telegraphy, it being understood, however, that the Government may at any time, and without incurring any liability, close or operate such installations, or temporarily prohibit their operation."

The above constituted the first attempt to secure for the Government the monopoly of the wireless telegraph service, but the bill was not passed.

In 1911 the Amazon Wireless Telegraph and Telephone Company established wireless stations in Manáos, Santarem and Belem, with modern wireless apparatus which had been purchased from the Telefunken Company of New York. On April 26, 1911, decree No. 8186 was passed, authorizing the Amazon Wireless Telegraph and Telephone Company to operate wireless stations throughout Brazil. This decree was issued only after several other attempts to obtain wireless telegraph concessions from the Federal Government had failed.

While so far no mention has been made of the entrance of the Brazilian Telegraph Administration into the field of wireless telegraphy, the Administration had by no means remained inactive. As a matter of fact, experimental trials had been undertaken in 1904 between a station in the fortress of Santa Cruz and a receiving station which had been installed on Grande Island, the distance between the two points being about 68 miles. Experiments were continued during the next two years, both with wireless transmission between land lines and between land and ship stations. By 1907 the progress

which had been made led the Telegraph Administration to report favorably on wireless telegraph to the President. In the same year (May 15, 1907) the President submitted to the National Congress the protocol of the International Wireless Convention of Berlin, with the recommendation that Brazil should join the Convention and in November, 1907, by decree No. 1775, the National Congress approved this recommendation.

The rapidly increasing use of wireles transmission led the 1908 National Congress to attach to the bill which authorized the appropriations for the ensuing year a demand for the appointment of a technical commission to inaugurate wireless telegraph service in Brazil. This commission was made up of representatives chosen by the Ministry of Industries, Ways and Public Works, and the Ministries of War and Navy, and the work entrusted to them was so successfully performed that by the end of the year the draft of a new law specifying the rules and regulations for governing the wireless telegraph service was laid before the Government. This proposed law was passed by decree No. 8542 of February 1, 1911.

In March of the year 1909 the Telegraph Administration began the erection of a wireless station to replace the semaphore office on Babylonian Hill. Upon the completion of this work on July 14, 1909, the Administration vigorously applied itself to the installation of three additional wireless stations. Of these, Amaralina (State of Bahia) was opened for public service on August 9, 1910, Olinda on October 22, 1910, and the high power station of Noronha,

with a sending radius of 1,000 nautical miles, on November 15, 1910. Statistics published in the report of the Telegraph Director for 1910 give the number of wireless messages transmitted during 1909 and 1910 as 310 and 3,711 respectively.

During 1911 the Government began the construction of two important stations, one in Juncção (State of Rio Grande do Sul) and the other in Lagoa (Island of Santa Catharina), both of which were opened on August 12, 1912. A smaller station at Monte Serrat (Santos) was placed in service on July 14, 1911.

In 1913 the Administration created the radiotelegraph district of Amazonas, with headquarters in Manáos, which included the 9 radiotelegraph stations located in the States of Pará, Amazonas, and in the Territory of Acre.

At the end of the year another proposed law for regulating the wireless telegraph service was presented to the Chamber of Deputies. After an exhaustive discussion it was approved by the Legislature and embodied in decree No. 3296 of July 10, 1917. This law places the radiotelegraph and radiotelephone services within the territory of Brazil and its territorial waters under the exclusive control and jurisdiction of the Brazilian Government. It further provides that the establishment and operation of radiotelegraph stations for public use shall be under the Ministry of Communications and Public Works, except where applied to the service of national defense, when they shall be under the Ministries of War and Navy. Though possessing the monopoly of wireless communication, the law permits the

Government to grant to persons of Brazilian nationality concessions (without any special privileges, however) to install and operate one or more high-power stations at suitable places on the coast, for the sole purpose of carrying on international and interterritorial communication with similar stations in other countries. All such stations must be connected with one of the National telegraph offices which shall have charge of the collection and distribution of the international wireless service and shall receive the terminal rate pertaining to the same.

The States of the Federation, not yet served by the telegraph, which desire to establish radiotelegraph stations within their territory are required to entrust both the installation and operation of the same to the General Department of Telegraphs.

A considerable portion of the law of July 10, 1917, deals with the use of wireless apparatus on board ships, and makes its use obligatory on certain types of vessels. It concludes with the provision that the Brazilian radiotelegraph service is to be governed by the rules authorized by the International Convention of London and such other regulations as shall be issued in connection with the execution of the present law. Furthermore, it provides that the Ministry of Communications and Public Works shall have charge of all measures for establishing wireless service with adjoining countries, and shall establish bases for treaties with such countries, which treaties, however, must be submitted to the National Congress for approval.

In 1921, in accordance with the above law, the Companhia Radiographica do Brazil received a con-

cession to install and operate high-power radio stations for direct communication with the Americas and Europe. This concession, which is for a period of 45 years, grants no monopoly nor special privileges of any kind and restricts operations to international service, communications between localities within the National territory being prohibited. The first two stations are to be established in the cities of Rio de Janeiro and Belem.

The rate charged for wireless service within the National territory, as officially fixed by decree No. 3441 of September 15, 1921, is 200 reis (6.6 cents) per word in addition to a basic charge of 1 milreis (33 cents) per message.

The 1916 report of the Telegraph Administration contains the following statistics relating to the wireless stations in operation in Brazil:

WIRELESS STATIONS IN BRAZIL FOR PUBLIC USE, JANUARY 1, 1917

		Working Limit (Nautical Miles)
(a) Coast Stations		
Amaralina	State of Bahia	400
Babylonia	City of Rio de Janeiro	200
Belem	State of Pará	400
Fernando de Noronha	Island of F. Noronha	1,000
Juncção	State of Rio Grande do Sul	750
Monte Serrat	State of São Paulo	200
Olinda	State of Pernambuco	590
S. Thomé	State of Rio de Janeiro	750
(b) Inland Stations		
Cruzeiro do Sul	Acre Territory	400
Manáos	Acre Territory.	750
Porto Velho	State of Matto Grosso	750
Rio Branco	Acre Territory	210
Santarém	State of Pará	400
Senna Madureira	Acre Territory	400
Tarauacá	Acre Territory	210
Xapury	Acre Territory	210

In addition to the above, the Ministry of Marine operates nine, and the Ministry of War seven wireless stations, which are for official use only.

STATE TELEPHONE

When it is recalled that it was Dom Pedro de Alcantara, the Emperor of Brazil, who at the Centennial Exposition in Philadelphia in 1876, after hearing the human voice over the telephone, made the historic exclamation, "My God, it talks!" it seems strange that upon his return to Brazil he should have permitted such an epoch making invention to remain almost inactive in the hands of the officials in charge of the transmission of intelligence by electricity.

The "Memoria Historica," under the head of "Telephone Service," states that the construction of telephone lines began in Brazil in 1879, in which year the Government also granted the first concession for the commercial use of the telephone. While this date is doubtless correct for the construction of the first State telephone line, which was built between the police headquarters and those of the fire department in the city of Rio de Janeiro, it is also true that private telephone lines existed as early as 1877, as will be shown in the chapter dealing with private telephone service.

The writer of the "Memoria Historica" next refers to the policy of the Government of granting concessions for telephone lines to private parties and declares that from the very start this policy was wrong. ("Logo en seu inicio o systema de concessões de linhas telephonicas a particulares provou mal.") This condemnation was due to the fact that the Government, at the time that private telephone line construction started, failed to issue ordinances for the protection of the National telegraph and fire

alarm lines against damage by adjacent telephone lines. To remedy this oversight and to prevent further trouble the Legislature of 1880 passed a resolution which assigned to the Telegraph Administration the construction of all private telephone lines. Foreseeing the commercial importance of the new rival the Director of Telegraphs advised the Government against granting any further licenses, and though no proper authorization to uphold this policy was obtained, thereafter all requests for the construction of private telephone lines were refused.

By 1881 the Brazilian State Council was considering the decision of the English Government, namely, that the telephone was of the same nature as the telegraph and should therefore be the monopoly of the Government. The Council adopted the same view and embodied it in a formal resolution, with the proviso, however, that the Government might grant concessions for the construction of private telephone lines, and by a circular letter dated May 6, 1881, so advised the governors of the various provinces. However, a decree of May 24, 1882, issued by the Ministry in charge of communications, declared that no further concessions for the building of telephone lines would be granted and that all pending applications were rejected. The situation was finally cleared by decree No. 8935 of April 25, 1883, which established rules and regulations governing subsequent telephone concessions. Although this legislation was intended to protect the monopoly of the Government, it failed in practice, largely on account of the laxity of various provincial authorities in upholding and enforcing it.

During 1885 the Telegraph Administration tested

the Van Rysselbergh system of simultaneous telegraphy and telephony, but found the results unsatisfactory.

Nothing of particular importance happened in connection with the State telephone during the four years following 1885. In speaking of the year 1889, when Brazil adopted the republican form of government, the writer of the "Memoria Historica" describes the condition of the State telephone service as follows: "Era essa a situação quando se extinguiu o antigo regimen. O serviço telephonico no Brazil estava ainda na infancia." (This was the situation when the former Government ceased to exist. The telephone service of Brazil was then in its infancy.) If this is meant to apply to the State telephone service only, no one will dispute its correctness, but at that time the private telephone service had already developed to a considerable extent.

The decrees of February 6, May 2, and November 20, 1890, have already been discussed in the chapter dealing with the telegraph under the republican government, as well as the practical difficulties which arose from the conflicting legislation which was enacted. These, however, were removed upon the promulgation of the new constitution. The latter authorized the Telegraph Administration to engage in urban as well as interurban telephone service, but without interfering with rights already acquired by private companies; likewise it gave the Administration the authority to build special telephone lines for the collection and distribution of telegraph messages and to install telephone toll stations for public use.

The Telegraph Administration as early as 1884 had opened a small local exchange as an experiment in the city of Maceió (State of Alagoas) and continued this service for eight years. In 1892 the exchange was closed but reopened shortly thereafter. It was finally abandoned December 1, 1896, and the apparatus and line material were offered for sale at public auction. Aside from the telephone exchange in the capital, this has been the only venture on the part of the Administration to establish a telephone exchange.

State telephone service in Rio de Janeiro became definitely established upon the promulgation by the Provisional Government of decree No. 1043 of November 20, 1890, which also created a distinct telephone district. At that time there existed two small telephone centrals in the capital, one in the building occupied by the Telegraph Administration to which 69 lines were connected, and the other in the War and Navy building with 37 lines for the exclusive use of the Minister of War. In addition to these Government owned and constructed lines, there existed in the city various private telephone lines.

Service over the Government lines reached only to the Fazenda de Santa Cruz. The plant had been constructed with such material as happened to be on hand, with the result that the poles were small and like those employed for the telegraph, while the conductors consisted merely of galvanized iron wire of 2 mm. diameter. Naturally lines built in such haphazard manner deteriorated very quickly so that the Administration was constantly called upon to

rebuild parts of them at a heavy expense to the Treasury. To avoid such unnecessary labor and expense the Administration reconstructed the plant in 1896 at a cost of 100,000 milreis ($33,000), replacing the old poles with larger and better ones and attaching the conductors to porcelain insulators of good quality. As the service was considerably improved thereby the municipality turned over to the Administration the lines used for fire alarm purposes.

Up to then the telephone service had been split up between the Telegraph Administration and the Ministry of War, and the latter had organized and paid for the special purpose of operating, constructing and maintaining telephone lines. Due to the increasing number of lines for the light and power circuits of the private companies, the single wire telephone lines of the Government suffered severely from induction which finally made it necessary to use metallic circuits. Replacement of the single wire lines by metallic circuits began in 1906 but was suspended in 1907 when the Administration found out that it would save much time and money by closing a contract with the Brazilianische Electricitäts-Gesellschaft for the furnishing of official telephone service. All these official lines were connected to three centrals, one in the building occupied by the Telegraph Administration, the second in the square known as Largo do Machado, and the third in the rua de S. Christovão. In addition to these three there were four other centrals used by the Ministry of War and Navy, police headquarters, and the general police. During 1908 the work of providing underground conduits for the Government telephone

lines progressed slowly, and but 3 kilometers (1.8 miles) were added to the 5 kilometers (3.1 miles) which had been completed in the preceding year.

The statistics published in the annual report of the Telegraph Department for the year 1908 mention a total of 762 subscribers on December 31, 1908, as compared with 680 on December 31, 1907, with a total of 3,010 kilometers (1,869 miles) of telephone wire at the close of 1908 as compared with 2,738 kilometers (1,700 miles) in the preceding year.

The only noteworthy event in connection with the telephone service during 1909 was the giving of an order to the firm of Siemens Brothers of London for a 400-line central battery switchboard with lamp signals, which required the use of metallic circuits.

During the year 1910 the Telegraph Administration constructed a telephone line between Rio de Janeiro and Petropolis, a distance of 53.8 kilometers (33 miles) consisting of 303 kilometers (188 miles) of wire, and also a line between Petropolis and Therezopolis, a distance of 42.5 kilometers (26 miles) consisting of 86.6 kilometers (53 miles) of wire.

Fearing that the Federal Government intended to furnish the public with telephone service between the capital, Nictheroy, Petropolis and Therezopolis, the Brazilianische Electricitäts-Gesellschaft appealed to the Government that, because of its contract with the municipality, the company possessed the exclusive right to furnish telephone service within the municipal area and that consequently a Government interurban service would infringe upon the concession to the Interurban Telephone Company of Brazil, a licensee of the complainant, which had

been authorized to provide telephone service within the State of Rio de Janeiro. To strengthen the argument the complainant pointed out that the interurban company had also received a permit to lay a submarine telephone cable between the capital and Nictheroy. Since the constitution authorized the Government to furnish interurban service, the complaint of the Brazilianische Electricitäts-Gesellschaft was dismissed.

STATE TELEPHONE STATISTICS

Year	Number of Subscribers	Kilometers of Wire
1890	106	....
1895	250	....
1900	409	....
1901	449	....
1902	486	....
1903	530	....
1904	564	....
1905	603	....
1906	607	2,315
1907	680	2,738
1908	762	3,010
1909	818	3,138
1910	918	3,439
1911	1,095	3,540
1912	1,165	3,777
1913	1,180	3,976
1914	1,195	4,491
1915	1,209	4,548
1916	1,205	4,596
1917	1,247	4,605

The report of the Telegraph Administration for 1911 shows that at that time interurban telephone service had been established between the capital, Nictheroy, Petropolis, and Therezopolis. For this service the following rates were charged for a conversation of five minutes' duration:

For a conversation established directly between two stations	1 milreis (33 cents)
For a conversation that had to pass through an intermediate station	2 milreis (66 cents)

From 1912 to 1917 the State telephone service continued to develop slowly, the only change which occurred being a slight reduction in the interurban rates which had been established in 1911.

PRIVATE TELEPHONE SERVICE

The development of the telephone service in Brazil is almost entirely the work of private enterprise.

The "Histoire de la Téléphonie," published in Paris in 1890 by Julien Brault, records that the telephone first appeared in the Brazilian Empire in the year 1877, and states further: "The first telephone was constructed in that year in the workshop of the Western and Brazilian Telegraph Company in Rio de Janeiro. Towards the end of 1877 Rodde & Company established a telephone between their offices and the Stock Exchange of Rio."

Two years later Charles Paul Mackie of Boston, Massachusetts, petitioned the Brazilian Government for a concession to furnish a local exchange service in the capital and its suburbs, likewise in Nictheroy. By decree No. 7539 of November 15, 1879, he obtained a 10-year concession with exclusive privileges for the first five years. The decree made it optional with him as to whether he should engage personally in the enterprise or organize a corporation for the exploitation of his concession. For reasons unknown, Mackie forfeited his concession, for in the list of decrees published in the 1906 annual report of the Brazilian Director General of Telegraphs decree No. 7539 is followed by the words "esta concessão caducou" (this concession lapsed).

The Government granted no further telephone concessions until April, 1881, when the Telephone Company of Brazil entered the field. As the formation of this company is closely interwoven with the work of the telephone pioneers in the United States a digression is desirable before taking up anew the thread of the story of the telephone in Brazil.

At this point it is the pleasant duty of the writer to disclose a phase of the marvellous organizing genius of Theodore N. Vail which is almost unknown in the country that witnessed his proudest achievements.

Only eighteen months had passed since the incorporation of the Bell Telephone Company of New York when in the midst of a multitude of sorely perplexing problems at home Vail turned his unique business acumen to the introduction of the telephone in foreign countries, and forthwith created the Continental Telephone Company, thus planting the seed from which sprung not only the telephone service of Brazil, but also that of various other Latin American countries.

The Continental Telephone Company received its charter from the Commonwealth of Massachusetts on January 7, 1880, and was dissolved April 18, 1894. The incorporators were Theodore N. Vail, later President of the American Telephone and Telegraph Company of New York, William H. Forbes, the first President of the American Bell Telephone Company, George L. Bradley, Charles Eustis Hubbard and Charles Emerson. According to the charter the company had been formed with a

capital of $100,000 "for the purpose of manufacturing, selling or renting electric telephones and telephonic apparatus, and to establish, build and maintain lines for the transmission of messages by electricity, or otherwise, in any country, or countries, other than the United States of America."

Records which fortunately have been preserved show that Professor Alexander Graham Bell and a number of his early associates like Watson, Sanders, and Blake, men who helped make the invention of Bell a commercial success in the United States, assigned to the Continental Telephone Company all their patent rights outside of the United States, as well as the sole and exclusive right to sell, lease and use Bell telephones, Blake transmitters, and all other telephonic apparatus then manufactured by the Bell Telephone Company of Boston, Massachusetts.

TELEPHONE COMPANY OF BRAZIL (Companhia Telephonica do Brazil). With the creation of the Continental Telephone Company, Vail set to work to carry into effect his plan for developing the telephone service in foreign countries and selected Brazil as a starting point. On October 13, 1880, Articles of Association were signed in Boston for the formation of the Telephone Company of Brazil, with a working capital of $300,000, consisting of 3,000 shares of $100 each. Among the men composing the Association were Theodore N. Vail, Henry S. Russell, Charles P. Mackie, William A. Forbes, George L. Bradley, Charles Emerson and James H. Howard. At the request of the Continental Telephone Company H. C. Adams, the Brazilian Vice Consul, certified the signatures.

Immediately after the formation of the Association, application was made to the Brazilian Government for a concession which virtually amounted to asking for a reinstatement of the former telephone concession granted to Mackie, with the result that by decree No. 8065 of April 17, 1881, the Telephone Company of Brazil was duly recognized and authorized to furnish telephone service.

On account of its historic value, copy of decree No. 8065 is subjoined, together with a translation:

"*Decreto No. 8065, de 17 de Abril de 1881.* Autoriza a TELEPHONE COMPANY OF BRAZIL a funccionar no Imperio.

"Attendendo no que Me requereu a TELEPHONE COMPANY OF BRAZIL devidamente representada, e de conformidade com a Minha Immediata Resolução de 15 de corrente mez, tomada sobre parecer da Secção dos Negocios do Imperio do Conselho de Estado exarado em consulta de 12 de Março proximo passado, Hei por bem Autorizal-a a funccionar mediante as clausulas que com este baixam, assignadas por Manoel Buarque de Macedo, do Meu Conselho, Ministro e Secretario de Estado dos Negocios da Agricultura, Commercio e Obras Publicas, que assim o tenha entendido e faça executar.

"Palacio de Marianna em 17 de Abril de 1881, 60' da Independencia e do Imperio.

"Com a rubrica de Sua Magestade o Imperador.

"Manoel Buarque de Macedo."

(TRANSLATION)

Decree No. 8065 of April 17, 1881. Authorization to the TELEPHONE COMPANY OF BRAZIL to carry on business in the Empire.

In pursuance of the request addressed to me by the TELEPHONE COMPANY OF BRAZIL, duly represented, and in conformity with my Resolution of the 15th of the

current month, based upon the report of the Section of Domestic Affairs of the Council of State, given in the consultation of the 12th of March last, I decide to authorize said company to operate under the clauses appended hereto, signed by Manoel Buarque de Macedo, of my Council, Minister and Secretary of State, Agriculture, Commerce and Public Works, whom I direct to comply with and execute this order.

Palace of Marianna, April 17, 1881, 60th year of the Independence of the Empire.

With the initials of His Majesty, the Emperor.

Manoel Buarque de Macedo.

It has commonly been assumed that because the Association was formed in Boston, the associates had asked the State of Massachusetts for a charter incorporating the Telephone Company of Brazil, but the fact is that the men who requested the Brazilian Government for authorization to supply a telephone service to the public failed to do so.

By May 28, 1881, the first three lines, with a total length of about one mile, were constructed in the capital. Ten months later the company had extended its telephone wire in both the capital and in the suburbs to 372 miles. About the same time it succeeded in obtaining a second decree (No. 8457 of March 18, 1882) giving it a concession for furnishing telephone service in various important cities, among them being Maceió, S. Salvador, Petropolis, Rio de Janeiro, Porto Alegre, Pelotas, and Rio Grande. This broad franchise, except in so far as it is referred to Rio de Janeiro, was declared void by decree No. 9664 of October 16, 1886.

Data contained in Brault's "Histoire de la Téléphonie" give the development of the Telephone

Company of Brazil from its inception to April 1, 1885, as follows:

"By 1882 the Telephone Company of Brazil had already opened 8 offices for the use of the public. By 1883 the company had established 5 exchanges with a total of about 1,000 subscribers. During the same year a long distance line of 100 kilometers (62 miles) had been built, connecting the capital with Petropolis, the residence of the Emperor. By April 1, 1885, the number of telephone exchanges in Brazil had increased to 7, with a total of 3,335 subscribers, of which the largest 3 were the capital and its suburbs serving 1,675 subscribers, Pernambuco with 275, and Bahia with 245 subscribers."

Early Brazilian records prove that but a few years after the inauguration of the telephone service in Brazil and the organization of the Telephone Company of Brazil, a rival concern, called the Companhia União Telephonica do Brazil, had started exchanges in Rio de Janeiro, Santos and São Paulo. It operated an opposition plant in the Federal Capital, finally incorporating the Telephone Company of Brazil and continuing to operate until 1889, when it was purchased by the Empreza Obras Publicas do Brazil, which, a year later, obtained a new concession to operate in the Federal Capital.

While the above information constitutes the only official reference to the Companhia União Telephonica do Brazil, some important data are contained in a leaflet published in October, 1885, by the Tropical American Telephone Company, which was incorporated in the State of New Jersey, U. S. A., on November 1, 1881, with headquarters at 95 Milk Street, Boston, Massachusetts. The leaflet states as follows:

"This Company acquired from the Continental Telephone Company of Boston, all telephonic rights formerly its property in Central America, Colombia, Venezuela, Chile, Peru, Ecuador, and Bolivia, and the West Indies, except Cuba.

"By subsequent purchase it obtained from the Continental Telephone Company all its existing telephonic rights in Brazil and the remaining countries of South America, including valuable contracts with subsidiary companies; and now has the sole and exclusive right to sell, lease, and use 'Bell' Telephones, 'Blake' Transmitters, and all other telephonic apparatus manufactured by the American Bell Telephone Company, under patents owned or controlled by it in the United States and Canada, in the entire territory of South America, Central America, and West Indies, named below, and is the source of supply for telephones, transmitters, telephonic instruments and supplies, to the following telephone companies already organized and doing business, viz:

"COMPANHIA UNIÃO TELEPHONICA DO BRAZIL, the successor of the Companhia Nacional de Electricidade and Companhia de Telegraphos Urbanos, operating in Bahia, Pernambuco, Pará, Santos, Campinos, and elsewhere in Brazil.

"COMPANHIA TELEPHONICÃ DO BRAZIL, operating in Rio de Janeiro and Nictheroy, Brazil."

It will be noticed that the name of the Companhia de Telegraphos Urbanos is included in the list of subsidiary companies mentioned above. This company owed its existence to decree No. 7753 of July 5, 1880, which authorized Morris N. Kohn to form a telegraph company to be known as the Empreza Telegraphica Electrica Urbana de Serviço Domestico, to operate in Rio de Janeiro, Nictheroy, and any other part of the Empire. This company in turn formed a new concern, the Companhia

Telegraphos Urbanos e Serviço Domestico, which by decree No. 8307 of November 12, 1881, was granted a 10-year exclusive franchise for messenger, police and fire alarm service in Rio de Janeiro and Nictheroy. Although there is no evidence to prove it, it is said that the Companhia União Telephonica do Brazil may have established itself in Brazil under the above concession.

Four months after the fall of the Empire the Provisional Government issued decree No. 199 of February 6, 1890, which authorized the transfer of all telephone lines within the boundary of the capital to the Municipal Administration, and at the same time gave the Federal Telegraph Administration the power to establish telephone plants for official and private use throughout the Republic.

Acting under this decree the Conselho da Intendencia Municipal in its session of March 25, 1890, decided to contract with the Empreza Obras Publicas do Brazil for furnishing telephone service in the Federal District, and a contract to this effect was executed the following day. Presumably this company carried on the telephone service in this territory until 1896.

In the absence of any available official documents, little is known about the condition of the telephone service in the capital from 1890 to 1896, but it is evident that the municipality was by no means anxious to continue the prevailing arrangement at the expiration of this period, for decree No. 49 of January, 1897, declared the contract with the Empreza Obras Publicas do Brazil definitely cancelled. At the same time the municipality announced that

a new concession would be granted to any responsible party which would undertake to supply an efficient telephone service throughout the entire municipal area, which then covered about 1,116 square kilometers (430 square miles), and in accordance with this plan invited public bids.

On February 12, 1897, the Municipal Authorities executed a contract with Siemens & Halske Aktien-Gesellschaft and Alberto Frend & Company for telephone service in the capital for a period of 30 years. Alberto Frend & Company transferred their interest to Theodor Wille & Company on June 18, 1898, the concession being modified by decree No. 622 of November 9, 1898, to cover this transfer. On January 17, 1899, pursuant to decree No. 3250, a new contract was made with Siemens & Halske Aktien-Gesellschaft and Theodor Wille & Company, regarding the telephone concession. Finally, on June 6, 1899, the concession was transferred to the Brazilianische Electricitäts-Gesellschaft.

BRAZILIANISCHE ELECTRICITATS-GESELLSCHAFT. In accordance with the terms of the contract between the city and the Brazilianische Electricitäts-Gesellschaft, the company agreed to pay to the municipality 10% of the annual net profits, and in consideration of such payment was exempted from all municipal taxes. The Bulletin of the Pan-American Union of July, 1899, contains a report by the French Consul at Rio de Janeiro, relating to the new telephone company, part of which reads as follows:

"A new German Company, called the Brazilianische Electricitäts-Gesellschaft, has been formed in Brazil, and

is authorized by a decree of April 7, 1899, published in the Diario Oficial, to operate in Brazil. This Company, with headquarters in Berlin, and which has a capital of 5,000,000 marks, seems to be destined to absorb all the other German electrical companies, thus forming one large syndicate."

The concession prescribed also the annual rates to be charged for telephone service and for this purpose divided the city into three zones. A feature of the concession was the provision that the rates would be varied according to fluctuations in exchange, and a schedule was appended setting forth the rates in the several zones at rates of exchange from 7 pence to 27 pence. Consequently, if the rate of exchange advanced, the telephone charges were decreased and, if the rate of exchange fell, the Company was at liberty to increase the charges. The rate schedule of the Brazilianische Electricitäts-Gesellschaft, at various rates* of exchange, was as follows:

Exchange Rate (pence)	1st Zone (milreis)	2nd Zone (milreis)	3rd Zone (milreis)
7	330	495	660
8	300	450	600
10	250	375	500
12	210	315	420
15	175	262	350
20	140	201	280
27	110	165	220

The above rates were still in use in 1920, although at frequent intervals since 1912 the company has asked the municipality to change them and to adopt a rate schedule on the number of messages used.

* For a number of years prior to the World War the value of the paper milreis was about 33 cents in U. S. currency. The present rate of exchange is about 14 cents (7 pence).

The Brazilianische Electricitäts-Gesellschaft continued to operate as an independent company until 1907, although as early as 1905 the entire stock had been acquired by interests associated with the Rio de Janeiro Tramway, Light and Power Company.

RIO DE JANEIRO TELEPHONE COMPANY. This company came into existence in 1907 and received its charter of incorporation on November 15th of that year. James E. Manter was the first president of the organization. Without going into the details of the charter it may be asserted that it was a very broad one and could cover almost any conceivable general business. Some interesting data about the Rio de Janeiro Telephone Company are found in the Brazilian Yearbook for 1908, namely:

"The Rio de Janeiro Telephone Company was incorporated in 1907 under the laws of the State of Maine, U. S. A., with a capital of $1,000,000 and a bonded debt of $1,000,000 consisting of 5% bonds. It owns the entire share capital of the Brazilianische Electricitäts-Gesellschaft, a German company, which holds the telephone concession granted by the municipality of Rio de Janeiro.

"The Rio de Janeiro Tramway, Light and Power Company, Ltd., owns the entire share capital of the Rio de Janeiro Telephone Company, which capital stock has been transferred to the trustees for the bond holders of the Rio de Janeiro Tramway, Light and Power Company, Ltd. In payment for advances made by it on account of the purchase and for construction and interest charges, the Rio de Janeiro Tramway, Light and Power Company, Ltd., receives the interest on the telephone bonds and the proceeds thereof if and when sold.

This telephone concession gives the exclusive right to exploit the telephone business in the Federal District until 1928."

The Rio de Janeiro Telephone Company was dissolved in 1911 when the shares of theBrazilianische Electricitäts-Gesellschaft became the property of the Rio de Janeiro Tramway, Light and Power Company.

THE RIO DE JANEIRO TRAMWAY, LIGHT AND POWER COMPANY, LTD. The second annual report of this company, covering the year 1907, refers to the telephone service in the capital as follows:

"During the past year the reconstruction of the building and plant, after the destructive fire at the central office, was completed, and an extensive reconstruction of the lines was undertaken. The entire overhead system has been practically reconstructed. In the new central station a new testing station has been installed and a switchboard for 4,900 lines has been provided. In addition to this four branch exchanges have been installed."

The third annual report of the company, for the year 1908, states:

"During the year considerable progress has been made in the development of the telephone system. An active canvass for telephone subscribers has been made, with the result that the subscribers have increased during the past year from 2,680 to 3,520, or an increase of 31.3%. The gross revenue for the year was $175,000, an increase of $58,800, or 50% over 1907, and the net revenue increased from $47,700 to $104,700, or 119%."

The report of the company for 1909 records a gain of 572 subscribers during the year. No detailed statistics are given in the 1910 report, but that of 1911 states the number of telephones at the close of the year as 6,275, not including 721 which were operated by the Interurban Telephone Company of Brazil, a company which operated in the city of Nictheroy and owned long distance lines to

Petropolis and Rio de Janeiro, the latter being reached by means of a submarine cable across the bay. In 1911 this company was acquired by the Rio de Janeiro Tramway, Light and Power Company, Ltd., which in turn passed into the control of the Brazilian Traction, Light and Power Company, Ltd., in 1912.

BRAZILIAN TRACTION, LIGHT AND POWER COMPANY, LTD. This company was incorporated in July, 1912, under the laws of the Dominion of Canada, and was formed to consolidate the interests of the Rio de Janeiro Tramway, Light and Power Company, Ltd., the São Paulo Tramway, Light and Power Company, Ltd., and the São Paulo Electric Company, Ltd.

The first annual report of the Brazilian Traction, Light and Power Company, Ltd., covers the period from its incorporation to December 31, 1913, and shows the growth of the telephone business in Rio de Janeiro by the following statistics:

	Dec. 31, 1911	Dec. 31, 1912	Dec. 31, 1913
Number of business telephones	5,140	6,981	8,376
Number of residence telephones	1,135	2,039	3,003
Total	6,275	9,020	11,379
Telephone gross earnings	$362,467	$538,048	$734,276

During 1914 the Brazilian Traction, Light and Power Company, Ltd., acquired a controlling interest in the Companhia Rede Telephonica Bragantina, which operated in the State of São Paulo, and in the Cia Telephonica do Estado de São Paulo,

which operated telephone systems in São Paulo, Santos and Campinas. The holding company continued its policy of absorbing the share capital of the last two mentioned companies during 1915, and at the end of that year held about 95% of the stock of each. Due to the World War the gain in subscribers was comparatively slow during the year, the total number of subscribers at December 31, 1915, being 11,811 in Rio de Janeiro, 1,151 in Nictheroy, 727 in Petropolis, and 97 in Barra do Pirahy.

Soon after the passage of legislation in December, 1914, authorizing the Government to permit connection of telephone lines at all State limits, the interurban service was connected with that of the Bragantina Company in the adjoining State of São Paulo.

RIO DE JANEIRO AND SAO PAULO TELEPHONE COMPANY. This company was incorporated under the laws of Canada in 1916 for the purpose of acquiring and developing the telephone enterprises owned by the Brazilian Traction, Light and Power Company, Ltd. The new company has a share capital of $5,000,000 and an authorized issue of $7,500,000 6% 30-year Bonds, and has acquired the shares of the following companies:

1. Brazilianische Electricitäts-Gesellschaft. This company serves the city and Federal District of Rio de Janeiro.

2. The Interurban Telephone Company of Brazil. This company serves the city of Nictheroy, capital of the State of Rio de Janeiro, Petropolis, and a number of smaller towns in the vicinity. The company's concession authorizes the extension of the service to all the important cities and towns throughout the State.

3. Companhia de Telephones Interestadoaes. This

company serves the municipalities of Cataguazes, São Paulo de Muriahe and Palma in the State of Minas Geraes, and of the municipality of Santo Antonio de Padua in the State of Rio de Janeiro.

4. Companhia Telephonica do Estado de São Paulo. This company serves the cities of São Paulo, Santos, and Campinas, the three principal cities in the State of São Paulo, and operates the toll lines between the first named cities.

5. Companhia Rede Telephonica Bragantina. This company serves about 100 of the most important municipalities in the State of São Paulo and that of several adjoining districts of the States of Minas Geraes and Rio de Janeiro. Besides the local services established in the principal centers of these municipalities, toll lines connect them with the cities of São Paulo, Santos, and other important centers.

The 1916 annual report of the Brazilian Traction, Light and Power Company, Ltd., states:

"Under working agreements made between the new company and the five subsidiary telephone companies, the new company is entitled to all their earnings, and on the other hand, provides for their capital and other requirements.

"The plan of the new company is to consolidate these several undertakings into one comprehensive telephone system.

"Until recently the Federal Government refused to allow telephone lines to cross from the territory of one State to another. Last year a law was passed removing this restriction, and the necessary licenses have been granted permitting the systems of the several companies to be connected across State boundaries, thus removing the most important barrier to the future progress and development of the telephone industry."

Before leaving the discussion of the telephone in the capital, something further should be said about the rates charged for the service. It will be recalled

that the municipality established the rates to be charged at the time it closed the contract for supplying telephone service with the Siemens & Halske Aktien-Gesellschaft. Since 1912 the mayors of Rio de Janeiro in their messages to the Municipal Council have advised that body to revise this contract and to use measured service as the basis for rates. Similarly the company has applied several times to the Municipal Council for authority to introduce the measured rate system, but without success. In their last petition made in August, 1919, the company pointed out as justification for their request that up to the end of 1920 they had installed more than 50,000 telephones at an expense of $15,000,000 and that no further capital for the development of the telephone service could be obtained unless the municipality authorized a change in the existing rates.

The growth of the Rio de Janeiro and São Paulo Telephone Company from 1916 to 1920 has been remarkable, the increase in telephones during this time being 33,816, or a gain of over 107%. On January 1, 1921, this company operated about 75% of the total number of telephones in the Republic of Brazil. The remaining 25% are represented by some 50 private concerns, of which the largest is the Companhia Telephonica Rio-Grandense, which operates in the State of Rio Grande do Sul, with headquarters at Porto Alegre. On January 1, 1921, this company had 7,200 subscribers.

The history of the development of the telephone service as related in this chapter proves that in Brazil, as in any other modern progressive country,

BRAZILIANISCHE ELECTRICITATS-GESELLSCHAFT
(Rio de Janeiro)

Year	Number of Subscribers	Kilometers of Wire
1906	2,000	.....
1907	2,680	.....
1908	3,520	.....
1909	3,991	.....
1910	4,859	25,000
1911	6,275	32,000
1912	9,020	42,000
1913	11,379	52,000
1914	11,669	75,000
1915	11,811	90,080
1916	14,313	93,358
1917	18,404	114,090
1918	22,263	135,192
1919	26,240	131,443
1920	29,275	150,000

RIO DE JANEIRO AND SAO PAULO TELEPHONE COMPANY

Number of Telephones:	1916	1917	1918	1919	1920
Brazilianische Electricitäts-Gesellschaft	14,313	18,404	22,263	26,240	29,275
The Interurban Telephone Co.	2,214	2,473	2,762	3,538 (Interurban and Interestadoaes combined)	4,003 (Interurban and Interestadoaes combined)
Cia. de Tel. Interestadoaes	382	386	422		
Cia. Tel. Estado de São Paulo	9,392	11,768	14,677	27,438 (Estado de São Paulo and Bragantina combined)	32,089 (Estado de São Paulo and Bragantina combined)
Cia. Rede Tel. Bragantina	5,250	6,680	7,518		
Total	31,551	39,711	47,642	57,216	65,367
Kilometers of Wire:					
Brazilianische Electricitäts-Gesellschaft	93,358	114,090	135,192	131,443	150,000
The Interurban Telephone Co.	.....	13,740	16,016	9,831	.....
Cia. de Tel. Interestadoaes	.....	1,037	1,981	2,477	.....
Cia. Tel. Estado de São Paulo	.....	78,107	78,107	138,085 (Estado de São Paulo and Bragantina combined)	.....
Cia. Rede Tel. Bragantina	.....	52,369	49,577		.....
Total	.....	259,343	280,873	281,836	302,169

the extensive development of the telephone requires the organizing ability and the up-to-date management of experts thoroughly competent to provide an efficient service, and a ready willingness on the part of the Government to aid all public enterprises that are earnestly striving to promote the welfare of a country.

GENERAL TELEPHONE DEVELOPMENT

Bearing in mind that from the very start the development of the telephone had been left to private enterprise, it is not at all strange that for 30 years the Administration did not possess complete information concerning the telephone development of the Republic. In the 1906 report of the Telegraph Administration, in the chapter entitled 'Serviço Telephonico Particular," the Director General writes that it is the intention of the Administration to prepare a detailed statement of the telephone development of the country. This is followed by an explanation of the difficulties which the Administration faced in gathering the necessary data. The report for 1907, referring to the telephone development of Brazil, contains the following paragraph:

"In the majority of the States of the Federation the companies that furnish a private telephone service are of small importance, and only in the States of São Paulo and Rio Grande do Sul are these telephone companies of an appreciable size. In the last mentioned State the Adminstration has had occasion to interfere with the action of the Minister of Industries, Ways, and Public Works, by refusing to grant concessions for telephone lines to be built in zones already served by the lines of the National telegraph."

The first "Quadro do Serviço Telephonico Particular," or summary of telephone companies, is contained in the 1907 report of the Telegraph Administration. It is, however, quite incomplete, and gives a total of 11,207 telephones and 12,342 kilometers (7,664 miles) of wire.

In the 1909 report the Director General of Telegraphs made another effort to assemble the statistics of private telephone companies in each State of the Federation. As in the former list, the data are deficient, the total number of telephones having increased, according to this statement, to 14,345 with 15,200 kilometers (9,439 miles) of wire. In its five subsequent annual reports the Telegraph Administration furnishes no information whatever on the development of private telephone systems in Brazil, but in the 1915 report there is a condensed summary of telephone statistics, as shown in the following table. As the Administration has omitted the statistics of the Brazilianische Electricitäts-Gesellschaft they have been added in order to make the table complete.

The latest report of the Telegraph Administration, that for 1917, merely repeats the above table, while the "Annuario Estatistico do Brazil," also published in 1917, only contains the 1907 statistics for the private telephone companies.

That the Government of a country, occupying such a leading rôle in the commerce of the world, has apparently so far overlooked the importance of possessing accurate and up-to-date statistical information about one of its most valuable public services, is regrettable.

TELEPHONE STATISTICS OF BRAZIL, 1915

States	Kilometers of Wire	Number of Telephones	Investment (milreis)
Alagoas	379	296	......
Amazonas	432	374	190,000
Bahia	2,130	1,459	......
Ceará	653	268	......
Espirito Santo	88	480	......
Federal District:			
Government system	4,548	1,209	......
Braz. Elec.-Gesellschaft	90,080	11,811	13,000,000
Goyaz	36	150	50,000
Maranhão	319	370	40,000
Matto Grosso	290	675	145,000
Minas Geraes	168	532	......
Pará	139	603	......
Paraná	1,070	722	1,000,000
Pernambuco	2,000	1,072	......
Piauhy	127	57	......
Rio de Janeiro	13,138	1,141	300,000
Rio Grande do Sul	44,383	10,368	5,458,000
Santa Catharina	573	550	140,000
São Paulo	45,725	7,648	8,820,000
Total	206,278 128,000 miles	39,785	29,143,000 $9,617,000

Based upon such information as has been received from private sources the total number of telephones in Brazil on January 1, 1921, is estimated as 85,000, which represents a development of 0.28 telephones per 100 of population. Undoubtedly, if complete recent statistics were available from all private companies, the telephone development of the Republic would be considerably higher.

APPENDIX I

Preface and Extracts from the Stipulations Attached to Decree No. 8065 of April 17, 1881

We the undersigned, Theodore N. Vail, Henry S. Russell, Charles P. Mackie, William A. Forbes, George L. Bradley, Charles Emerson and James H. Howard, for ourselves, our associates and successors, declare that we have formed in the State of New York a joint-stock company, consisting of seven or more members, for the purpose of carrying on the business of constructing and operating telephone lines in the city of Rio de Janeiro and its suburbs, and in the city of Nictheroy, in the Empire of Brazil, which latter city shall be placed in communication with said capital by means of a submarine cable, in accordance with the stipulations of decree No. 7539 of November 15, 1879; also for constructing and operating other telephone lines and for transacting any other business relating thereto which now, or in future, may be permitted or conceded by the Government of Brazil to the said Association and for the above mentioned purposes; also for buying and renting all kinds of movable or immovable property needed by said Association, in accordance with the stipulations attached hereto.

Article 1. The name of the Association shall be the TELEPHONE COMPANY OF BRAZIL (Companhia Telephonica do Brazil).

The Association shall continue until November 1, 1890, unless it be legally dissolved prior to that date, or in accordance with these stipulations.

Article 3. The following persons shall constitute the first Board of Directors of the Association and shall continue until retired, in accordance with these statutes, namely: Theodore N. Vail, Henry S. Russell, Charles P. Mackie, William H. Forbes and J. H. Howard.

Article 4. The headquarters of the Association shall be in the city of New York, or in any other place, or places, which at any time may be designated in writing by two-thirds of the Directors.

Article 5. On the second Wednesday of January of each year a meeting of the stockholders shall be held at the headquarters of the Association. The first meeting shall take place on November 1, 1880.

Article 6. The capital of the Association shall be divided into 3,000 shares of a nominal value of $100 each. This number may be increased or decreased at any time as set forth hereafter.

Article 7. The number of shares held by each member of the Association is:

Henry S. Russell	2,940
Theodore N. Vail	10
Charles P. Mackie	10
William H. Forbes	10
George L. Bradley	10
Charles Emerson	10
James H. Howard	10

The Articles of Association were signed and sealed on October 13, 1880, at Boston, State of Massachusetts, and filed with James B. Bell, Registrar of Documents for the State of New York in the city of Boston. The signatures were also certified to by Henry C. Adams, Brazilian Vice Consul in Boston, at the request of the Continental Telephone Company.

A translation into Portuguese of the Articles of Association was made by J. J. Christian Voigt, sworn public translator, at his office in Rio de Janeiro, on December 10, 1880, and was attached to Imperial Decree No. 8065 of April 17, 1881.

APPENDIX II

Interstate Toll Lines

The rules governing the construction of interstate telephone toll lines were attached to Article 99 of Budget Law No. 3089 of January 8, 1916, which fixed the general expenditures of the United States of Brazil for the financial year 1916.

Article 99. The Government will issue concessions for interstate telephone lines, subject to rules assuring their regular and satisfactory working, but such concessions do not establish any exclusive privilege.

Regulations

I. The Telephone Company has permission to build lines from .... to .... over the boundaries of the States of .... and .... and to proceed with their operation, in accordance with the provisions of Article 99 of law No. 3089 of January 8, 1916.

II. The Company shall obtain the approval of the Government for the connection referred to in paragraph I, also for the plan showing at what point or points the lines are to be joined. Furthermore, the Company must submit to the Government a written report showing the position of the said lines in relation to other electric circuits, if there are any within a distance of twenty meters (66 ft.) on either side of the proposed line. This report must specify the type and number of posts and insulators which the Company intends to use, the number of conductors to be strung, their quality and diameter, also the method of construction.

If the Government requires no changes in the plan submitted within ninety days after the filing of the plan and the written report, both shall be deemed approved. After the approval of the plan and material, either by a special permit or by the lapse of ninety days, construction may be started.

III. The connections between frontier municipalities of two States shall be the subject of a special license whenever said municipalities are not included in the plan that has been approved. Nevertheless, the substitution of or addition of lines to the already approved plan may be made without obtaining a new concession, provided the conditions stated in paragraph II are complied with.

IV. The General Telegraph Administration shall supervise the proper construction of the line, or lines, and the Company shall pay the sum of 2,400 milreis ($792) annually,

payable semi-annually in advance, for each section of 25 kilometers (15.5 miles) of line, or fraction thereof, beyond the frontier.

V. In the conduct of the telephone service hereby authorized, the Company shall comply with the regulations of the General Telegraph Department.

VI. In case of civil disturbance, the Government may take charge of the telephone service or may suspend it, indemnifying the Company for losses which may result from such action; said losses shall be calculated on the basis of the earnings during the corresponding period of the previous year.

VII. The Company undertakes to guarantee the satisfactory working of the lines.

VIII. The rates between the different States shall not be higher than those in force for the same distances, measured in kilometers, within the respective States. Service required by the Government shall be entitled to a rebate of 50% of the rates established for interstate communications.

IX. Before signing the contract the Company shall deposit with the Federal Treasury the sum of 3 contos ($990) as a guarantee of its faithful execution.

X. For non-fulfilment of any of the paragraphs of the agreement, fines of from 100 milreis ($33) to 500 milreis ($165) may be imposed upon the Company by the Ministry, on the recommendation of the supervising department, which fines shall be paid within 30 days from the date of their demand, and if not paid they shall be deducted from the guarantee deposit of 3 contos ($990).

In such case the Company will be notified by the General Telegraph Administration to replace the said guarantee within the period of 30 days, and if the Company fails to do so, the rights which have been granted shall be cancelled, independent of any action or judicial intervention.

XI. If the Company decrees to transfer the contract to another company, enterprise or individual, it must first give notice to the Government of its intention to do so.

XII. Aside from the right of expropriation, as specified in other pertinent laws, the Government may take possession of the telephone lines in operation upon an agreement with the Company, in accordance with the provisions embodied in the contracts which it may have with the State and municipalities.

APPENDIX III

State of São Paulo

Law No. 11 of October 28, 1891

(A Concession for Telephone Lines does not establish an exclusive monopoly.)

Article 1. Within the provisions of the present law, every citizen is entitled to construct and operate telephone lines within the boundary of the State.

Article 2. For a telephone line which does not extend beyond the limits of one municipality, the permission for the construction and operation of such line shall be obtained from the respective municipality.

Article 3. However, if such line serves simultaneously two or more municipalities, the permission for the construction and operation of the line shall be obtained from the State Administration.

Article 4. Recipients of a State concession for a telephone line shall comply with all municipal regulations within the limits of each municipality traversed by the line.

Article 5. The right to grant concessions for telephone lines and to subject them to regulations, does not entitle the municipality to levy taxes or create onerous conditions in favor of municipal lines against lines that have received a State concession.

Article 6. The construction of telephone lines shall be permitted on all public thoroughfares, provided permission has been obtained from the proper authority.

Article 7. A concession for building telephone lines given by the municipality or by the State, shall not establish

an exclusive privilege on the part of the concessionaire or the company.

Article 8. The parties to whom concessions are granted assume the following obligations to the State:

a) To give preference to official calls.
b) To surrender their lines to the State Government, in consideration of the payment of an indemnity, whenever the Government may deem such expropriation advisable.

Article 9. The Government shall issue the regulations necessary for the execution of this law.

Regulations

1. The........Telephone Company is hereby granted permission to establish and operate a telephone line connecting the municipalities of........and........

2. The present concession shall remain in force for the period of 25 years from........ The Government may declare this concession forfeited

a) If the construction of the line has not been commenced within six months from the date of the concession.
b) If after construction has been started, telephone service has not been inaugurated within one year from the present date.
c) If after its inauguration, service is interrupted for more than three consecutive months without due cause.

3. The present concession does not establish any monopoly or exclusive privilege in favor of the licensee, who must respect the legal rights of others. The Government may, at any time, grant new concessions for the telephone service, or itself establish such service between the points mentioned in paragraph I.

4. The present concession includes besides the lines and accessories, the intermediate or terminal stations which may be used in intermunicipal service. Service within any municipality shall be established exclusively by virtue of permission from the respective municipal board.

5. The concessionaire shall have the right to build telephone lines on all highways included between the points referred to in paragraph I, but for such purpose he shall first obtain permission from the proper authorities. For the support of wires or erection of poles on private property the concessionaire shall obtain the necessary consent from the owner.

6. The concessionaire must submit to municipal regulations within the limits of each municipality through which the lines pass. The Government must protect the concessionaire against non-observance of the provisions which forbid municipalities to create taxes or onerous conditions against the licensee's line in favor of the municipal lines.

7. In the construction of the lines which the concessionaire may build, the rules and principles of the art shall be observed. The Government shall always have the right to prevent the construction of lines which do not present the proper conditions of solidity or of guarantee against accidents, and the removal or replacement of supports, wires, etc., that may in any way be detrimental to public transit.

8. Before beginning construction, and in order that the right mentioned in the preceding paragraph may be exercised, the concessionaire shall send to the Government a plan of the route of the main lines which shall show the terminal or intermediate stations, the distance from all telegraph, telephone, or electrical transmission lines which may be in the vicinity of the route, as well as the railroads and highways followed or crossed. The concessionaire shall also submit drawings showing the type of line to be constructed, whether aerial or underground, supports, crossarms, wires, etc., together with information regarding the material and apparatus to be employed and the protective devices employed when crossing other conductors of electricity or in crossing railroads. As soon as construction work has been finished the concessionaire shall furnish the Government with exact information regarding the route and length of lines (branch lines being listed separately), the number of terminal and intermediate stations, and the number of

public and subscribers' stations. For the same purpose as above mentioned, the concessionaire shall give due notice in advance of all modifications adopted from time to time with reference to the route, character of line and means of protection.

9. The concessionaire shall observe the regulations issued for the faithful execution of law No. 11 of October 28, 1891, and the instructions establishing the conditions upon which the highways may be used and other instructions issued in the interests of the safety of transit, both on the highways and on the railroads which the telephone line may follow or cross, and for the protection from accident of the telephone users.

10. For intermunicipal service the Government may require that there be used at least two complete metallic circuits for calls from exchanges and public stations. The Government may also require the use of underground lines, or of overhead lines of a special type, in sections of the intermunicipal line where conditions demand such construction.

11. The poles, crossarms, wires and accessories of the concessionaire's line shall be so placed as not to interfere with or disturb the telegraph and telephone lines and apparatus already in operation. It is also his duty to see that the apparatus installed by him shall not be affected by existing electrical conductors. He must always avoid, as far as possible, running his lines parallel with others, and crossing other lines, such crossings, where necessary, being made preferably at right angles. The Government may require the use of special devices for protection or safety in cases involving risk of accident.

12. The Government shall require other concessionaires of telephone and electric power transmission lines, to make their installations in such manner as not to interfere with or disturb the operation of the concessionaire's lines.

13. The concessionaire shall give notice to the Government of the date of commencing the operation of his lines for subscribers' service, exchange and public stations, and shall attach to such notice a copy of the rates to be charged.

All rates shall be uniform and without discrimination, so that any reductions shall be applicable to all subscribers in the same class. Changes in the rates shall always be brought to the attention of the Government.

14. The concessionaire shall keep the lines and all accessory apparatus in good condition so as to guarantee the continuity and regularity of service at all points where telephone service is furnished. The subscribers' contracts shall contain provisions protecting the subscribers' interests, with statements of the rebates or indemnities, also provisions for cancellation in case of continued interruption of service.

15. In localities reached or traversed by the lines, placing such localities in communication with one or more points in different municipalities, the concessionaire shall establish exchanges or public stations to which all subscribers' lines shall be connected, and where telephone service can be furnished to non-subscribers. Such public stations may be dispensed with by special act of the Government if the line connecting two points in different municipalities is so short that the subscribers' lines may be considered as being connected with the exchange or city system existing at one of the terminals of the line. However, establishment of such stations shall be compulsory when city systems are in operation at both terminals of the line, whether connected to the intermunicipal system or not.

16. At public pay stations for intermunicipal service the concessionaire shall install the usual devices to guarantee the privacy of telephone conversation. Calls shall be given precedence in the order in which they are requested. The rates, regulations, time-tables, etc., of the service shall be posted in these stations.

17. The recording in writing and the distribution of telephone messages shall be allowed only by express authorization of the Government and will not be allowed when telegraph service is available or is established between the points on the concessionaire's line.

18. The object of the present concession is telephone service. If the concessionaire, by use of his line or by un-

authorized delivery of telephone messages in writing, establishes an illegal competition with the Government telegraph service, the concession shall be annulled and the Government shall take steps, if necessary, to render such annulment effective.

19. For reasons of a public nature the Government may impose limitations on the telephone service, or may make exclusive use of such service, in consideration of an indemnity fixed by mutual agreement, or in the absence of such agreement, awarded by arbitration, as provided in paragraph 23.

20. The concessionaire shall:

a) Give preference to official calls.

b) Surrender its lines to the State Government in consideration of an indemnity, whenever the Government may decide that expropriation is advisable, such expropriation to be carried out in accordance with the law then in force.

21. All communications which the concessionaire may have to make to the Government shall be addressed to the Office of the Secretary of Agriculture, Commerce and Public Works of the State, or to such department as that office may designate, and all official communications relating to the service in charge of the concessionaire shall issue from such partment.

22. The concessionaire, or any party acting for him, shall inform the Government of all alterations which may be made in the organization of the undertaking by virture of the transfer of the present concession. The concessionaire shall present to the Government within the first two months of each year statistical data covering the preceding year relating to the length of lines, number of telephones in the service of subscribers, receipts and expenses, and new construction and betterments. When the service is in charge of a company the latter must furnish to the Government a list of the officers and a copy of the report to the stockholders.

23. Any disagreements which may arise between the Government and the concessionaire shall be settled by arbitration, in the following manner: each of the parties shall

appoint one arbiter; if these two do not agree, a third arbiter shall be selected by the two parties, and if they cannot agree each party shall designate one person, and the third arbiter, selected by lots between these two, shall decide the question.

24. If the system is in operation before the presentation to the Government of the plan of the main line and the other information referred to in the first and second parts of paragraph 8, the Government shall fix a reasonable time limit for such presentation and may impose a fine in case the limit is exceeded.

25. The State courts shall have exclusive jurisdiction over the concessionaire.

26. For non-observance of any of the above paragraphs the concessionaire shall be subject to a fine of from 100 milreis ($33) to 1,000 milreis ($330).

27. The concession to which the present rules refer shall become void if the concessionaire does not appear at the Office of the Secretary of Agriculture, Commerce and Public Works, to sign the contract within 60 days from the date of the publication of this decree.

APPENDIX IV

State of Minas Geraes

Decree No. 3961 of July 19, 1913, governing the concessions for building telephone lines connecting the municipalities of the State.

Regulations

Article 1. In accordance with the provisions of the Federal Constitution, decree 1663 of January 30, 1894, and State Law No. 2 of September 14, 1891, No. 148 of July 26, 1895, and No. 596 of September 19, 1912, the power to grant exclusive privileges for the construction of telephone lines is entrusted to the State and Municipal Governments, in accordance with the provisions of the present Regulations.

Article 2. Concessions granted by the State may or may not involve exclusive privileges, and they become the per-

petual property of the concessionaires. Exclusive privileges, however, shall not be granted for a term longer than 25 years, and shall not prevent or interfere with subsequent concessions for the construction of other lines passing through any of the municipalities covered by such exclusive privileges or the connection of such municipalities with other lines not covered in the original exclusive concession.

Article 3. Concessionaires seeking exclusive privileges must petition the Government of the State for such privileges, through the Secretary of Agriculture, Industry, Lands, Ways and Public Works, setting forth the municipalities which the lines shall serve or cross, the length of the lines, the distance from other lines existing in the same district, the probable cost of construction, and any other information which they may deem it desirable to present.

Article 4. When concessions have been granted by the issuance of a decree, the concessionaire shall sign the respective contract, in the office of the Secretary of Agriculture, within the period of 90 days from the date of said decree under penalty of the cancellation of the concession without further action on the part of the State Government.

Article 5. Concessions without exclusive privileges, as well as permits for line connections only, even if under exclusive privileges, shall be granted by act of the Secretary of Agriculture, Industry, Lands, Ways and Public Works. Such concessions shall not prevent the granting of exclusive privileges for other lines in the same municipality. The latter, furthermore, shall enjoy preference, other conditions being the same, over the lines having non-exclusive rights.

Article 6. No concession shall be transferred before the respective line is built, nor without previous consent of the State Government.

Article 7. No concession shall be granted for the construction of lines to connect more than 20 municipalities. In the case, however, of a line already built and in regular operation, even though it connects 20 municipalities, the concessionaire shall enjoy preference as regards the con-

struction of extensions, provided the limit established in this article, with reference to concessions for such extensions, is not violated.

Article 8. Every concessionaire of telephone lines shall respect and observe the municipal laws within the limits of each municipality in which the lines run.

Article 9. The concessionaire of telephone lines shall give preference to official calls, which shall be free of charge. The concessionaire shall also give up his line or lines to the Government of the States, whenever the latter may so desire, in consideration of an indemnity previously agreed upon.

Article 10. Incoming press calls shall be entitled to a reduction of from 25% to 50% of the rate schedule approved by the Government.

Article 11. For the support of wires for the erection of poles on private property, the concessionaire shall obtain the necessary consent of the owners of such property.

If, for a line to be built under an exclusive concession, it is not possible to obtain such consent, even in consideration of an equitable indemnity by the concessionaire of the line, the Government shall grant to the latter the right of expropriation in the interest of the public and in accordance with the existing laws.

Article 12. The State Government shall always have the right to prevent the construction of lines which are lacking in solidity and protection against accidents. The Government may also require the removal or replacement of all such supports, wires, etc., as may in any way interfere with public traffic.

a) For this purpose, the Government shall also have the right to supervise the construction of the lines through an employee whose compensation shall be paid by the Government, for the account of the concessionaire, who shall pay into the State treasury in advance, and also quarterly, the amount which shall be inserted in the concession.

b) Supervision shall begin as soon as construction of the line is commenced.

c) In order that these provisions may be enforced, the concessionaire shall submit to the Government, before beginning actual construction work;

1. A plan of the route of the lines, showing terminal and intermediate stations and the position of telegraph lines, other telephone lines, or electric power lines which may be in the vicinity of the proposed route, as well as the distance of all such lines from the proposed route. The plan shall also show the railroads and highways followed or crossed.
2. Drawings showing the type of line to be erected, whether aerial or underground, and supports, crossarms, wires, etc.
3. Statement of the material and apparatus to be employed, and of the protective measures to be adopted in the proximity of, or in crossing other existing electrical conductors, and in crossing railroad tracks.

Article 13. The line having been built before service can begin, the concessionaire shall submit for the approval of the State Government, at least 15 days in advance, the respective rate schedules. Any change in rates made thereafter shall also be subject to the approval of the State Government. If the Government has not approved the rate schedules or ordered changes within 15 days after presentation, such schedules shall be considered approved, and the concessionaire shall be free to commence service.

Article 14. In all public stations there shall be exhibited the regulations, rate schedules, and time-tables of the service, and the privacy of telephone conversation shall be assured.

Article 15. All calls shall be furnished in the order in which they have been submitted.

Article 16. For non-observance of the Government orders, issued in accordance with the provisions of the

present Regulations, and for non-observance of the latter, the concessionaire shall be fined from 100 milreis ($33) to 1,000 milreis ($330), according to the gravity of the violation, such fine to be doubled for a second offense or in case violation continues after the imposition of the first fine.

Article 17. In addition to the provisions of Article 4, the concession shall become void:

a) If the fines, in accordance with the preceding article, are not paid, and the fault not corrected, within 3 months after the imposition of the fine.

b) If the time limits established for beginning the work and for finishing the lines are exceeded, without an extension having been granted by the Government, or if the construction work remains interrupted during 90 consecutive days, without justification.

Article 18. Before signing the contract, and in order to guarantee its execution, the concessionaire shall deposit in the State Treasury, in cash or in Government bonds, the sum of 500 milreis ($165) for each group of 5 municipalities included in the concession. This guarantee shall be required even when a smaller number of municipalities than 5 is included in a concession, and shall be retained until the expiration of the term of the exclusive privilege. From this guarantee shall be deducted the fines imposed upon the concessionaire; after such deduction the guarantee shall be replaced within 30 days from the date of notifying the concessionaire by the proper department.

Article 19. No Municipal Chamber exercising the powers conferred by laws No. 2 of September 14, 1891, and No. 148 of July 26, 1895, shall grant a concession for the construction of telephone lines outside the limits of the respective municipality. In case it is desired to establish telephone service between two or more municipalities, the agreement of the Chambers affected and the consent of the State Government shall first be obtained.

Article 20. The Court which shall decide all questions,

arising from concessions for extending telephone service by the Government, shall be that of the State Capital.

Article 21. The provisions of the Regulations, approved by decree No. 1018 of March 30, 1897, remain in force as far as they are not cancelled by the present Règulations.

APPENDIX V

International Agreements

Telegraph Convention between Brazil and Argentina

On June 15, 1899, Brazil signed a telegraph traffic convention with Argentina, by which Argentina agreed to furnish a special international wire between Buenos Aires and Paso de dos Libres, thence across the Brazilian frontier to Uruguayana (Brazil). On its part, Brazil undertook to provide a special wire between Uruguayana and Porto Alegre. As compensation for the transmission of international messages the Telegraph Administrations of the two Republics adopted the subjoined schedule, the debits and credits to be adjusted monthly.

A. TELEGRAMS FROM BRAZIL TO ARGENTINA:

The Brazilian Telegraph Administration will credit the Telegraph Administration of Argentina as follows:

a) 20 centimes gold per word for an ordinary paid telegram to be sent over the lines of the Argentine State Telegraph Administration.

b) 40 centimes gold per word for an ordinary paid telegram to be sent over lines other than those of the Argentine State Telegraph Administration; also messages to Paraguay and Bolivia.

c) In addition to the charge made for transit messages (to be determined by the Berne International Bureau), an extra charge is made for telegrams destined to points not mentioned under a and b.

d) 10 centimes gold per word for press telegrams to be sent over the lines of the Argentine State Telegraph Administration.

e) 20 centimes gold per word for press telegrams to be sent over lines other than those of the Argentine State Telegraph Administration and to Paraguay and Bolivia.

B. TELEGRAMS FROM ARGENTINA TO BRAZIL:

The Argentine Telegraph Administration will credit the Telegraph Administration of Brazil as follows:

a) 50 centimes gold per word for a telegram to points within the zone designated as Southern Brazil.

b) 1 franc 50 centimes per word for a telegram to points within the zone designated as Northern Brazil.

c) 1 franc gold per word for an international telegram which passes over the Brazilian telegraph lines from one frontier to the other (transit messages).

d) 25 centimes gold per word for press messages sent to any point reached by the Brazilian telegraph lines.

Telegraph Convention between Brazil and Uruguay

On April 8, 1899, Brazil and Uruguay entered into an agreement for the mutual exchange of telegraph messages by connecting the Brazilian frontier telegraph offices at Quarahy and Livramento with the nearest offices in Uruguay, which were at S. Eugenio and Rivera. The main features of this agreement were:

Article 3. The Brazilian Telegraph Administration agrees that for traffic purposes, in accordance with a former agreement which the Brazilian Telegraph Administration entered into with a private telegraph company of Uruguay (Empreza do Telegrapho Oriental), the route Livramento-Rivera shall be considered the "via de escolha," or the route left to the choice of the sender of the message.

Article 4. If for any reason the last mentioned agreement ceases to exist, the route Livramento-Rivera shall become the ordinary route for all continental and international transit messages over the land lines of Brazil and Uruguay.

Article 6. If after one year traffic over the line Porto Alegre-Livramento-Montevideo becomes so heavy as to cause more delay in transmission than would result over the direct line via Jaguarão, the Telegraph Administration of Uruguay will undertake to connect Montevideo with Artigas by two special wires whose electrical resistance shall not exceed 7.5 ohms per kilometer.

Article 7. Assuming that the conditions stated in Articles 4, 5, and 6 prevail, the Brazilian Telegraph Administration agrees not to connect any of its telegraph lines with any others already built, or to be built, in Uruguay, so that all messages passing over the land lines of Brazil, destined for Uruguay, or for transit through the latter country, and vice versa, shall be sent via Jaguarão-Artigas or Livramento-Rivera, due regard to be had, however, to the route of preference indicated by the sender of the message.

Article 9. For a private message sent over the route Livramento-Rivera, the route of choice as indicated above, the Telegraph Administration of Uruguay is to receive the following compensation:

a) 40 centimes gold per word for a message sent to any of the State telegraph offices of Uruguay.

b) The same amount, plus an additional charge, due private telegraph companies, for a message directed to a point in the interior of Uruguay, not reached by any State telegraph lines.

c) 40 centimes gold per word, plus any additional charge, due to other lines, for a telegram passing through Montevideo to Chile, Peru, and other South American countries.

d) 80 centimes gold per word for a telegram sent to Argentina, Paraguay and Bolivia.

Article 10. If the conditions mentioned in Article 4 exist, the above charges shall be modified as follows:

a) 25 centimes gold per word for a message sent to any of the State telegraph offices.

b) The same amount, plus any additional charge, due private telephone companies, for a message directed to a point in the interior of Uruguay, not reached by any of the State telegraph lines.

c) 40 centimes gold per word for a telegram sent to Argentina, Paraguay and Bolivia.

d) 25 centimes gold per word, plus any additional charge due other lines, for a message passing through Montevideo to Chile, Peru, and other South American countries.

Article 11. The Brazilian Telegraph Administration is to receive as compensation the terminal and transit charges stated in Schedule B, attached to the International Rules & Regulations, as revised in Budapest, i. e.

a) 50 centimes gold per word for a telegram sent to the southern zone of Brazil.

b) 1 franc 50 centimes gold per word for a telegram sent to the northern zone of Brazil.

c) 1 franc gold per word for a transit telegram that passes over the Brazilian lines.

d) 1 franc 50 centimes gold per word, plus the charge due to that company, for a telegram to be delivered to any of the telegraph offices of the Amazon Telegraph Company.

e) For messages via the transatlantic cables which touch at Recife or at Pinheiro, destined for Central or North America, the charges are those published in the Boletin Telegraphico of the Brazilian Administration (No. 21 of November 15, 1898), deducting from the total, however, the amount due the Telegraph Administration of Uruguay.

Article 20. The above agreement is for 3 years from the date of the opening of the route Livramento-Rivera, but each Administration reserves to itself the right to propose modifications during the last 3 months of the duration of this agreement. If neither changes nor cancellations of the intertraffic agreement are proposed, the present agreement shall continue automatically for another period of 3 years.

Telegraph Convention between Brazil and the Telegrapho Electrico de Montevideo, known as the "Telegrapho Oriental"

The following traffic agreement was entered into between the above mentioned parties on August 3, 1899.

Article 1. The "Telegrapho Oriental" agrees, within 6 months from the signing of this agreement, to put its line between Jaguarão and Montevideo in such working condition as to guarantee a rapid international service.

Article 2. The "Telegrapho Oriental" promises to use all proper means to assure a rapid service between Montevideo and Buenos Aires, using for this purpose either the line, or lines, owned by the company, or the line, or lines, of any other private company which will enable the company to operate a telegraph office in direct connection with its central office in Montevideo. In order to carry out this agreement the work must be finished within a year from the date of the signing of the agreement, but within that period the company may use the State telegraph lines, or any other lines, which in the judgment of the company may be most convenient for that purpose.

Article 3. If for any reason the company has failed to finish the work within the time stipulated in Article 2, the route Livramento-Rivera shall become the normal line of transmission for continental and international transit messages over the Brazilian land lines and the cables connecting with the latter.

Article 4. During the life of the present agreement the Brazilian Administration agrees, as regards the exchange of telegraph messages, not to connect its lines with those of any other private telegraph company within the territory of Uruguay.

Article 5. The Brazilian Telegraph Administration agrees to deliver to the "Telegrapho Oriental" all telegraph messages passing over its lines, and the cables connecting with them, destined for South American republics, and declares the route via Jaguarão to be the route of normal and rapid transmission, except for such messages as, by the

sender's orders, shall be sent over a different route. On the other hand, the "Telegrapho Oriental" promises to route over the Brazilian lines all messages received from points within Brazil, or any other country reached by the cables connected with the Brazilian land lines, excepting such messages as by the sender's orders shall be sent over a different route.

Article 6. The Brazilian Telegraph Administration promises to prevent other companies from furnishing service at rates lower than those established by the "Telegrapho Oriental."

Article 9. Beginning with the date of the signing of this agreement, the "Telegrapho Oriental" shall receive 40 centimes gold per word for an ordinary private telegram and 40 centimes gold per word for the same class of messages from Montevideo to Buenos Aires. The Brazilian Telegraph Administration shall receive 50 centimes gold per word for all messages passing over its lines to points situated within the southern zone, and one franc gold per word for all messages sent to points within its northern zone.

Article 19. The present agreement shall remain in force until March 31, 1913, but it may be modified by mutual consent of the contracting parties.

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History of the Telephone and Telegraph *in* Chile

1851 - 1922

By
VICTOR M. BERTHOLD
of the
American Telephone and Telegraph Company

NEW YORK
Nineteen Twenty-four

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CHILE

Area:	289,796 square miles
Population:	4,020,000 (estimate for 1922)
Capital:	Santiago. Population 518,000

STATE TELEGRAPH

Origin and Early Development

The introduction of the electric telegraph in Chile took place in 1851, the last year of the administration of General Manuel Bulnes, famous in the annals of that republic for his defeat of the Peruvian army under the Dictator, Santa Cruz, in the battle of Jungay in 1839, and for his later victory at Loncomilla in 1852.

Great as were the martial triumphs of General Bulnes, they were overshadowed by the peaceful achievements of an American, William Wheelwright. It is to this captain of industry that Chile is indebted for three of her great sources of progress, namely, the construction of the first railroad in South America, connecting the port of Caldera with the city of Copiapó in 1851, the inauguration of the first steamboat service between the west coast and Europe in the early sixties, and the introduction of the electric telegraph in the republic, which, in the opinion of the writer, constitutes Wheelwright's greatest and most valuable gift to Chile. It is pleasant to recall that the Chilean Government gratefully acknowledged his services to the Nation, and by decree of September 17, 1850, presented him with a gold medal.

The best and most authentic account of the introduction of the telegraph in Chile has been published by "La Union," one of the leading newspapers of

Santiago, in a special edition commemorating the first meeting held at Valparaiso in November, 1851, for the purpose of forming an association to exploit Wheelwright's concession. As the writer of that article had access to all the official and private records that have been preserved in Santiago, the story of the introduction of the telegraph in Chile is, in the main, the account as published in "La Union."

Early in 1851, William Wheelwright applied to the Chilean Government for an exclusive franchise to interconnect the most important cities of the republic by electric telegraph lines. As the Government possessed no information relating to the project, Wheelwright's request was submitted to two of the foremost Chilean scientists, Amado Pissis and Carlos Bello. After a careful study, both of these gentlemen reported favorably on the application of Wheelwright; and, relying upon their judgment, the Government granted the concession, a translation of which follows:

"In view of the application, and the report made by Messrs. Amado Pissis and Carlos Bello, acting as experts for the Government, the President of the Republic of Chile grants to William Wheelwright an exclusive franchise, for the period of eight years, for the construction of three telegraph lines; the first to connect Santiago with Valparaiso; the second to connect Santiago with the northern provinces; and the third to connect Santiago with the southern provinces.

"The line between Santiago and Valparaiso must be finished within two years, that to the northern provinces within five years, and the line to the southern provinces within eight years. Should the Government receive another request for a concession to construct the last two mentioned lines in less than five and eight years, such application shall be entitled to preference, but the concession herein granted to Wheelwright shall not be declared void, provided the concessionaire binds himself to construct these two lines in less time than that mentioned above.

"In consideration of the foregoing, and in accordance with the provisions of the law of September 9, 1840, let there be granted to William Wheelwright an exclusive franchise, pro-

vided he has paid into the Federal Treasury the amount of 50 pesos, and has deposited with the National Museum a plan of the telegraph apparatus together with a description of its operation.

"Let the above be entered in the auditor's office of the Exchequer and also placed in the Records of Concessions kept in the Ministry of the Interior.

(Signed) BULNES
"Santiago, February 14, 1851 ANTONIO VARAS."

The formation of an association which would furnish the concessionaire the financial means for constructing a telegraph line between Santiago and Valparaiso was the next problem that confronted Wheelwright. As a preliminary step he wrote and published a descriptive circular of the electric telegraph, together with an estimate of the cost of building the first telegraph line, which he placed at 38,000 pesos. He sent this circular to the leading citizens of Valparaiso and Santiago, appealing to them to finance the new enterprise. In Valparaiso his efforts resulted in the underwriting of 250 shares of stock at 100 pesos each. At the meeting which was held a few weeks later, to form an association for the construction of the proposed telegraph line, the following stipulations were adopted:

1) The contractors must build the line within six months, using only the best material obtainable in its construction.
2) The stockholders must pay to the contractors the sum of 35,000 pesos; namely, 10,000 pesos as soon as the line from Valparaiso to Casablanca was finished, 10,000 pesos when the line was extended to Curacaví, and the remainder when the line was completed to Santiago.
3) The association, to be known as the "Compañía de Telégrafo Magnético entre Valparaiso y Santiago," was to become the owner of the line.
4) The association was to undertake to establish an office, pay the salaries of operators, and also all import duties on telegraph apparatus and accessories.

5) The contractors were to manage the line for one year and to receive for their services 3,000 pesos annually, provided they agreed to instruct six young men in the operation of the telegraph.

A second meeting, which was called for February 28, 1852, was postponed for the reason that President Manuel Montt was expected to visit Valparaiso shortly, and it was believed that he would be pleased to participate in a trial of the electric telegraph. To carry out this plan a line was run between the residence of señor Gallo, the meeting place of the stockholders, and the Hotel de la Union, the headquarters of the President. This trial took place on March 5, 1852, and the first message sent by President Montt read:

"March 5, 1852, the first trial in Chile of the electric telegraph."

As the apparatus worked faultlessly, the President inquired if the contractor thought the electric telegraph would be a success in Chile. He was assured that within four years the most important cities in the republic would be interconnected by telegraph.

Shortly after this meeting, the line from Valparaiso to Casablanca, a distance of 32 miles, was finished. A public trial was arranged for April 25, 1852, the outcome being as satisfactory as in the case of the previous test.

Although the contractors had promised that the entire line would be in operation by June 1st, the inclemency of the weather prevented its opening on that date. On June 21, 1852, the first telegraph message passed between Valparaiso and Santiago; but it was not until April 23, 1853, that the line was opened to the public. The service hours were from 9 a. m. to 4:30 p. m., and from 6:30 p. m. to 8 p. m.

At the first general meeting of the Compañía de Telégrafo Magnético, the shareholders elected señor

don Eduardo Mickle president of the company, and appointed señor Crockett manager of the telegraph offices in Santiago and Valparaiso. The directorate consisted of Messrs. Bernardo Salas, J. A. Mercado, Tomás Grey, Pascual Soruco and Nicomedes Ossa. The share capital of the company was 40,000 pesos, divided into 400 shares of 100 pesos each.

Although the practicability of electrical transmission had been proven, the public showed little interest in the financing of the enterprise. In fact, the citizens of Santiago did not subscribe for a single share of the 40 that had been allotted to that city, the entire stock of the association being subscribed for in Valparaiso.

The newspaper "El Mercurio" gave a detailed account of the opening of the Valparaiso-Santiago line, and with much enthusiasm predicted that the traffic receipts would make the stockholders independently wealthy. This prediction, however, did not materialize, for the Presidential Message of 1853 mentions that on account of the small returns from traffic over the new telegraph line the Government had, on November 3, 1852, granted the company a subsidy of 2,000 pesos; and a similar amount was paid during the two subsequent years. In fact, the enterprise became so unprofitable that in 1855 the company was forced to suspend service for some time.

On November 10, 1852, the Chilean Government enacted the "Lei Reglamentaria del Servicio de los Telégrafos Eléctricos," the first law concerning the electric telegraph service, Article I of which reads:

> "No telegraph line shall be placed in public service unless the Administration has been informed about the location of the office, also the names of the persons employed for the reception and transmission of correspondence. As soon as a change is made notice of this fact must be given to the Administration."

None of the sixteen articles of which the law consists refers to the rates to be paid by the public for tele-

graph messages, although the law provides that telegraphic communication shall be held inviolate, and places a heavy fine upon any employee who divulges the contents of a message. It likewise contains a number of paragraphs forbidding the willful destruction of telegraph lines or apparatus, and provides that in case of a riot, insurrection, etc., the Government may take over any existing telegraph line, guaranteeing the owner of such line the payment of an amount per diem equal to the average daily gross revenue derived from the operation of such line during the preceding thirty days.

As the company organized by Wheelwright was in no financial condition to undertake the building of a line south of Valparaiso, the Government decided to do the work. The material was ordered from France and two French electricians were engaged to supervise the construction. This line, connecting Santiago and all the principal intermediate towns with Talca, a distance of 187 miles, was finished in 1857. In his annual report, the Minister of the Interior, Geronimo Urmeneta, informed the National Congress that the Santiago-Talca line had been opened to the public, but that, on account of the insufficiency of budget appropriations, he now faced the alternative, either of stopping the work of construction, or of continuing it without a specific appropriation in the expectation that Congress would approve of the additional amounts that it would be necessary to pay out. To prevent similar occurrences in the future, he recommended that thereafter a definite sum should be set aside in the annual budget for the construction of new telegraph lines. He also pointed out the need of rules and regulations for the service of electrical communication. Acting upon his advice, the Government, on November 21, 1857, issued its first decree fixing telegraph rates. The following tariff was established

for a message not exceeding ten words, the address and signature being free:

From	Santiago	to	San Bernardo	0.15	pesos
"	"	"	Rancagua	0.20	"
"	"	"	Rengo	0.25	"
"	"	"	San Fernando	0.30	"
"	"	"	Curicó	0.35	"
"	"	"	Talca	0.40	"

For a message exceeding ten words, an extra charge of one centavo for each additional word was made.

The outbreak of the civil war in the middle of 1858 interfered to some extent with the progress of the State telegraph. Under the leadership of P. L. Gallo the insurrection spread rapidly in the north of Chile, where the cities of Copiapó and Talcahuano became the centers of disturbance. The uprising assumed such proportions that the Government was forced to despatch an army under General Juan Vidaurre who, in 1859, defeated the leaders of the revolutionists. Despite this victory of the Government, serious rioting occurred again in September of the same year in Valparaiso.

That the new means of electrical communication proved of value in those critical days is mentioned in the 1859 annual report of the Minister of the Interior. Of greater interest is the detailed account, contained in the same document, of an offer made to the Government in May, 1859, by the company that had constructed the Valparaiso-Santiago line, for the operation of the Santiago-Talca line at a stated annual amount. As the sum asked by the company appeared to be exorbitant, the Administration rejected the first proposition but accepted a lower bid, with the approval of the Postmaster-General. A contract was entered into between the Government and Messrs. Narciso and Ponciano Dávila, representing the company, stipulating that the latter should operate the line for three years upon the receipt of an annual

subsidy of 13,000 pesos. To avoid the impression that the amount conceded by the Government was excessive, it is explained that the term "operation" included maintenance, repairs of apparatus, and salaries of engineers, linemen and operators. Under the terms of the contract the company was obliged to install six telegraph offices in the various localities through which the line passed, at its own expense, which alone called for an expenditure of 2,700 pesos. The report of the Minister of the Interior concluded with the statement that the estimated annual receipts from the operation of the line did not exceed 4,000 pesos.

Amalgamation with the Postal Service

An important change in the status of the existing telegraph lines was brought about in 1858 by the issuance of an ordinance, "Ordinanza Jeneral de Correos", which declared all State telegraph lines to be a part of the Postal Service. This law remained in force until January 31, 1872, when it was repealed.

Concerning the development of the telegraph during the decade 1860-1870, our information from official sources is limited to the annual reports of the Minister of the Interior. During this period the telegraph remained a branch of the Postal Service; but in 1872 it became a separate administrative department and remained so for over forty years. In 1920 the Government reverted to its former policy and again combined the mail and the telegraph services under one administration.

Before taking up the noteworthy events relating to the State telegraph that occurred in the decade 1860-1870, it is well to take into consideration that the Republic of Chile, since the inauguration of President don José Joaquin Perez in 1861, had to contend with many serious problems, such as the insurrection of Araucania in 1861, the terrible conflagration of

Santiago in December, 1863, and the Spanish war which lasted from 1866 until 1879. At the outbreak of hostilities on March 31, 1866, the bombardment of Valparaiso occurred, which, within a few hours, caused the loss of property valued at about 10,000,000 pesos.

The annual report of Antonio Varas, Minister of the Interior, after commenting on the progress of the Postal Service, made the rather disheartening statement that "no se nota un progreso parecido en las líneas telegráficas" (the telegraph lines do not show a similar progress), due to the difficulty of maintaining them in proper working condition. The Minister also stated that, although the operation of the Santiago-Talca line remained in the hands of the contractor, he was convinced that the line should be immediately taken over by the State, which, he said, would provide a better service than that furnished by private parties who considered the business merely as a speculation.

In 1863 the Administration cancelled its contract with Messrs. N. and P. Dávila. It signed an agreement, however, for a period of three years, with a new contractor who undertook to operate the line upon the receipt of an annual subsidy of 6,200 pesos. Although the Government received bids from private parties for the extension of the line from Talca to Concepción and thence to the harbor of Talcahuano, nothing further was done.

The Memoria, or annual report, of the Minister of the Interior for the year 1864 is a very valuable record. Recalling the fact that the republic had in operation 586 kilometers of railroad, the Minister informed the National Congress that two wires had been strung parallel to the railroad between Santiago and Valparaiso, one for the exclusive service of the railroads and the other for the transmission of private telegrams. The report also gives the expenses in-

curred for the construction of State telegraph lines since the inauguration of that service, i. e.:

1853	2,000	pesos
1854	1,300	"
1855	2,600	"
1856	15,900	"
1857	36,700	"
1858	20,600	"
1859	22,600	"
1860	19,100	"
1861	16,500	"
1862	13,700	"
Total	151,000	"

In his report for the following year the Minister of the Interior paid a glowing tribute to the Chilean nation:

"The unjust and baselessly provoked war which Spain has forced upon us has subjected the Chilean people to a severe test which has proven the solidity of the national character and the excellence of the republican institutions of our Government."

Concerning the telegraph, Congress was advised that the two wires that had been strung parallel to the railroad between Santiago and Valparaiso had been a very efficacious help during the war with Spain.

During 1865 the cities of La Serena, Ovalle, Illapel and La Ligua were connected with Santiago and Valparaiso. Firmly convinced now of the political and commercial value of the new means of rapid communication, and opposed to the payment of further annual subsidies for the operation of telegraph lines built with public funds, the Government decided that the best interests of the State and of the public demanded that all telegraph lines should be managed and operated by the Government. This decision was embodied in a decree of October 9, 1866, which created the first operating organization of the State telegraph lines and placed the entire service under the management of the Director General of the Postal

Department. The decree divided the plant into three sections, of which the first was the route from La Serena to Calera; the second, the route Valparaiso-Santiago to Talca; and the third, the Talca to Lota route. That the reader may get an adequate idea of the State telegraph included in these three sections the following data are added:

ROUTE 1.

La Serena	to	Ovalle	113	km.
Ovalle	"	Illapel	141	"
Illapel	"	Vilos	55	"
Vilos	"	Ligua	102	"
Ligua	"	Calera	64	"
Calera	"	Valparaiso	72	"
				547 kilometers

ROUTE 2.

Valparaiso	to	Calera	72	km.
Calera	"	Santiago	143	"
Santiago	"	San Bernardo	31	"
San Bernardo	"	Rancagua	68	"
Rancagua	"	Rengo	31	"
Rengo	"	San Fernando	26	"
San Fernando	"	Curicó	52	"
Curicó	"	Molina	15	"
Molina	"	Talca	52	"
				490 kilometers

ROUTE 3.

Talca	"	San Javier	42	km.
San Javier	"	Linares	53	"
Linares	"	Parral	41	"
Parral	"	Cauquenes	50	"
Cauquenes	"	Quirihue	54	"
Quirihue	"	Tomé	70	"
Tomé	"	Penco	21	"
Penco	"	Concepción	18	"
Concepción	"	Coronel	40	"
Coronel	"	Lota	14	"
				403 kilometers

In October, 1866, the Chilean telegraph system, extending from La Serena, south of Valparaiso, to Tacna in the north of the republic, comprised 1,440 kilometers of wire. In the same year the Government commenced the construction of a line from La Serena to Copiapó, a distance of 482 kilometers, and also ex-

tended the line from Copiapó to Caldera. To satisfy the demands of the constantly increasing traffic, it became necessary to attach a second conductor to the majority of the State telegraph lines.

A decree of January 10, 1868, standardized the rates for telegrams sent over the State lines and those built by private parties. In this new tariff the Government based the rates both on the number of words and on the length of the line, namely:

1) For a message not exceeding 10 words
   a) over a line distance up to 50 km......0.25 pesos
   b) for each additional 10 km. of line.....0.01 "
2) For a message of more than 10 words, each additional group of 10 words was considered another message.
3) No extra payment was required if the excess distance did not exceed 5 km.
4) No extra charge was made if the additional number of words did not exceed five.

During 1869 telegraph service was established between Cauquenes and Parral, a distance of 49 kilometers. In 1870 branch lines were constructed from Cauquenes to Quirihue, 54 kilometers, and from Angeles to Nacimiento, 178 kilometers, and a line built along the railroad connecting Chillán with Talcahuano, 196 kilometers.

Separation from the Postal Service, Decree of 1872

A commission, appointed to examine the existing telegraph ordinances and decrees, advised the Government that a new set of rules and regulations should be prepared as, up to that time, the State telegraph lines had been built mostly by special authority conferred upon the President by the law of September 25, 1865. Upon the recommendation of the commission, the Minister of the Interior ordered the drafting of new rules and regulations, which were approved

by Congress and embodied in the decree of January 31, 1872, as "Reglamento Jeneral para la Administración de los Telégrafos del Estado." One of the innovations was the creation of the office of an Inspector General as manager of the State telegraphs, making him directly responsible to the President. Another modification prescribed that the State telegraph lines should be divided into thirteen districts, viz.:

Iquique	including	14	localities
Antofagasta	"	7	"
Copiapó	"	18	"
La Serena	"	13	"
Ligua	"	16	"
Valparaiso	"	3	"
Santiago	"	30	"
Curicó	"	22	"
Parral	"	22	"
Concepción	"	25	"
Angol	"	17	"
Temuco	"	8	"
Valdivia	"	20	"
Ancud	"	12	"

a total of 227 cities and towns that could be reached by the State telegraph lines.

The decree of January 31, 1872, also enacted a new and greatly simplified telegraph tariff, which abolished the additional charges for line distance over which a message was sent. The new rates were:

For a telegram not exceeding 15 words (address and signature not being counted), a basic charge of 0.20 pesos, plus 2 centavos for each additional word.

A reduction of 50% of the ordinary rate was allowed the press, clubs, and mercantile associations.

The first international telegraph line between Chile and Argentine, connecting the cities of Valparaiso and Santiago with Buenos Aires, was opened on July 26, 1872, the Presidents of the two republics exchanging congratulatory messages. The building of this line was initiated by the law of January 3, 1871, by which the contractors, Messrs. Clark and Company,

were granted an annual subsidy of 8,000 pesos for a period of nine years for the construction of a metallic telegraph circuit between the two republics.

Some Adverse Developments

During the year 1872 political events occurred which a few years later led to an appeal to arms by Chile, namely, the conclusion of a secret treaty between Bolivia and Peru. These governments claimed to be acting to protect their respective interests on the Pacific Ocean; Chilean historians, however, assert that they had become alarmed at the increasing commercial superiority of Chile, due to its nitrate and guano industries. The world financial panic of 1873 brought about a tremendous decline in the value of Chilean exports, with the result that the already burdened finances of the Government nearly succumbed. Naturally, expenditures for all public services, including the State telegraph, were greatly restricted. From 1873 the financial situation of Chile steadily grew worse until, in 1878, the banks were compelled to suspend specie payments. In their plight they were obliged to issue notes, backed by the Government's guarantee. At this time the Bolivian Government levied a heavy royalty on the nitrate extracted by Chilean companies operating in Bolivian territory, which threatened ruin to the most promising enterprise in which Chilean business men were engaged. Chile, holding that this measure was a violation of the terms of the treaty of 1866, and determined to protect its commercial interests, despatched a fleet to seize the ports of Bolivia, whose territories at that time extended to the sea, whereupon the latter declared war in March, 1879. Peru offered to arbitrate, but at the same time began to gather an army on the southern frontier. Chile rejected the offer of arbitration and demanded that Peru remain neutral. Failing

to secure compliance, Chile declared war against Peru in April, 1879. This fierce struggle lasted until October 20, 1883, when a treaty of peace was concluded with Peru; and in December of the same year peace was also established with Bolivia.

With these historical events in mind, we can now review the most salient features of the annual reports of the Minister of the Interior and of the Director of Telegraphs, covering the years 1873 to 1879. Commencing with the 1874 report of the Minister of the Interior, we find that the State telegraph system, then extending from the provinces of Atacama to Arauco, comprised 4,900 kilometers of wire, served by 53 telegraph offices. In the supplementary report of the Director of Telegraphs, reference is made to the prospective joining up of the Chilean national lines with Europe, Asia and North America, via Brazil, the submarine cable from Lisbon to St. Vincent lacking only the link to Pernambuco to complete telegraph connection between South America and the rest of the world.

In the annual report for 1877 of the Director of Telegraphs, the attention of the Government is directed to the competition by private companies with the State telegraph and the loss of revenue to the Government caused by such competition. The Director writes:

> "Not only has Chile permitted private companies to furnish domestic telegraph service to the public, but the Government has left the international telegraph service entirely in the hands of private enterprise. A comparison of the annual gross receipts of one of these companies with the revenue received from the State telegraph proves that, had the Government received a similar amount, the State telegraph would show a net revenue equal to 13.37% of its annual gross expenses."

For this reason the Director advised the Government to imitate the action taken in 1869 by the English

Government, and to acquire all domestic and international private telegraph lines. Although as early as January 3, 1871, Congress had passed a law to the effect that the Chilean Government should take possession, at an opportune time, of all privately owned and operated international telegraph lines, no further action had been taken in the matter.

Due to the exigencies of the war with Bolivia and Peru, the Chilean Government ordered the extension of many telegraph lines, the most important being the extension of the line from Caldera to Antofagasta, consisting of five sections, viz.:

Caldera	to	Chañaral	177 km.
Chañaral	"	Taltal	176 "
Taltal	"	Paposo	76 "
Paposo	"	El Cobre	138 "
El Cobre	"	Antofagasta	155 "
Total			722 kilometers

The construction of this important link was commenced in June, 1879, and completed in August of the same year.

A summary of the telegraph work necessitated by the war is contained in the Memoria for the year 1880. At that date 1,339 kilometers of new military telegraph wire had been built, 1,264 kilometers of existing wire had been reconstructed, and 25 new telegraph offices had been opened, the total expense of these operations amounting to 75,000 pesos.

The subjoined table shows the progress of the State telegraph system from 1871 to 1881:

	Year 1871	Year 1881
Number of Offices	40	108
Kilometers of wire	4,500	8,784
Number of telegrams transmitted:		
a) Paid messages	84,000	273,000
b) Official messages	40,000	160,000
Value of service:		
a) From paid telegrams	41,000 pesos	85,000 pesos
b) Value of official service	29,000 "	78,000 "
Estimated value of plant	—	579,000 "

A Decade of Progress, 1881-1891

During the next decade, with the exception of the revolution at the end of Balmaceda's presidency (1891), Chile enjoyed a period of prosperity, during which the public revenues increased considerably, due to the nitrate and copper located in the provinces wrested from Peru and to the flourishing condition of commerce and industry. That the National telegraph system shared in the general prosperity of the republic is proven by the following data:

Year	Budget Appropriation (Pesos)	Total Extension of Wire	Value of Plant (Pesos)
1881	98,000	8,784 km.	579,000
1882	132,000	8,943 "	594,000
1883	141,000	10,106 "	674,000
1884	173,000	10,319 "	688,000
1885	214,000	11,836 "	813,000
1886	229,000	12,147 "	844,000
1887	264,000	12,147 "	844,000
1888	275,000	12,505 "	943,000
1889	288,000	12,577 "	1,036,000
1890	369,000	13,355 "	1,115,000

From the above it will be seen that during the ten-year period the telegraph system was increased by 4,571 kilometers of wire, the largest additions being in the years 1883 and 1885.

In the 1886 Memoria of the Minister of the Interior, Congress was informed that, despite the uninterrupted construction of new telegraph lines, the State system did not satisfy the needs of commerce and the general public. For this reason the Minister recommended that all important lines should be operated with duplex apparatus. He also stated that, in localities where the State lines were insufficient for the traffic, he had granted concessions for the construction of private lines, for example, a new line between Santiago and Valparaiso, another link between Arica and Tacna with permission to extend the line to the frontier of Bolivia, and a concession for a line from La Serena to Coquimbo.

The 1889 Memoria makes it clear that although three years had passed since the Minister of the Interior had advised the members of Congress of the insufficiency of the National telegraph plant, the fast growing commerce of Chile then demanded yet greater facilities for rapid communication. Under date of June 1, 1889, the Minister of the Interior memorializing Congress, wrote as follows:

"La red de líneas telegráficas en actual servicio está muy distante de satisfacer todas las necesidades del movimiento politico y comercial del pais, no solo por la mala construcción de muchas de ellas sino por la deficiencia de los hilos conductores para la transmisión expedita de todos los despachos."

(The telegraph lines that exist at present are far from satisfying the political and commercial needs of the country, due not only to the bad condition of many of the lines, but also to the insufficiency of wires for the rapid transmission of messages.)

In corroboration of the above, it was pointed out that the extensive territory from Puerto Montt (in the north of the Province of Llanquihue) to the Strait of Magellan, a distance of over 700 miles, was still without any means of telegraphic communication with the rest of the republic. This, however, should not be taken as a reflection upon the Administration, since the territory referred to had, in 1890, but a few hundred white settlers.

Revolution and Reconstruction

As a result of the revolution which started in January, 1891, and lasted nearly a year, the National telegraph system became nearly disorganized. By a decree of January 7, 1891, the Dictator, Balmaceda, ordered all telegraph offices closed for public service. He then proceeded to open a number of new offices in charge of inexperienced employees, whose political loyalty was assured by high pay. Immediately after

the overthrow of Balmaceda, the Provisional Government took drastic measures to bring order out of the prevailing telegraphic chaos. By a decree of October 28, 1891, señor don Guillermo Porton was appointed a delegate with full power to reëstablish the State telegraph, and on December 19, 1891, he transmitted his report to Ramon Barros Luco, Minister of the Interior, in which he summed up the situation as follows:

"En general puedo decir que no sé si debido a la época de trastorno por que atravesava el país, ó a mala administración ó vigilancia, el telégrafo se encontraba casi en una completa desorganización."

(Generally speaking, I am unable to decide whether the complete disorganization of the telegraph is attributable to the recent political disorder or to bad administration and supervision.)

The 1892 report of the Director of Telegraphs gives an account of the sad condition of the telegraph at the end of the revolution, and also contains a statement of the new work needed to reëstablish the service. During that year 2,900 kilometers of telegraph line were reconstructed at an expense of 28,000 pesos.

During 1894 extensive line reconstruction work was continued, 1,200 kilometers of wire being repaired at an expense of 120,000 pesos. In addition thereto the Administration undertook the building of a number of important new lines, such as that from Chañaral to Copiapó, 258 kilometers. Considerable improvement in the transmission of telegrams was brought about by the installation of duplex apparatus. A trial made with the quadruplex system between Santiago and Valparaiso gave less satisfactory results.

In accordance with the instructions to the Chilean Ambassador in France, five manufacturing companies submitted bids for the laying of a submarine cable between Punta Arenas and Puerto Montt. The India Rubber, Gutta-Percha and Telegraph Works Co.,

Ltd. of England, was accepted by Chile as the successful bidder. This company undertook to lay the cable for £119,500.

Telegraph Finances and Rates

The Memoria of the Minister of the Interior, submitted to Congress in June, 1897, allows us for the first time to form some definite idea of the financial situation of the State telegraph service. The report states that, despite increased rates, the State telegraph was far from returning to the State the expenses incurred by the service. During the year 1896 the Government paid out 797,000 pesos, while the income was only 446,000 pesos, leaving a deficit of 351,000 pesos. In explanation of this unsatisfactory showing, it is stated that the rates were far too low, as was proved by the fact that, taking as a basis the value of Chilean currency, there was not a country where the telegraph service was so cheap. For this reason the Minister recommended a 50% increase in the rates, in accordance with the increases which the Government had ordered for passenger fares on the State railroads. The Government accepted this recommendation, and by decree of July 9, 1898, issued a new schedule of rates, which became effective on August 1, 1898. The new rates were as follows:

1) For a telegram of 10 words sent from the Chañaral office, near the northern boundary of the republic (Province of Atacama):
   a) To the south of the republic........ 0.30 pesos
      Plus 3 centavos for each additional word
   b) To the north of the republic...... 0.40 pesos
      Plus 4 centavos for each additional word
2) For a telegram of 10 words transmitted between the two zones.................... 0.40 pesos
   Plus 4 centavos for each additional word

In counting the words of a message the date, address and signature were not included, nor was any additional fee required for messages handed in during the night.

During the two following years the Government continued its policy of extending the telegraph lines, so that at the end of 1900 the system consisted of 17,769 kilometers of line with 20,397 kilometers of wire. About this time Chile opened negotiations with Argentine with a view to connect their respective telegraph systems, and also took steps to join the International Telegraph Convention which had been called to meet in London.

The Memoria of the Minister of the Interior, submitted to Congress in September, 1901, again called attention to the fact that both the postal and telegraph services were run at a loss to the Government. The reason alleged for the failure of these services to produce a revenue was that they were operated independently of each other. As a corrective measure the Minister submitted a draft of a law authorizing a reorganization of both services.

By decree No. 4891 of December 16, 1903, the President approved the new rules and regulations for the service of State telegraph offices. This decree was a very comprehensive document consisting of 28 chapters, dealing with various phases of the service, the duties of employees and rates.

The year 1904 was notable for many legislative acts dealing with the telegraph service, which were discussed in the Message of the President read at the opening of the session of the National Congress. Among the most important may be mentioned the telegraph convention between Chile and Bolivia; a similar convention between Chile and Argentine; decree No. 2410 of June 22, 1904, which fixed the rates for international telegrams sent over the Chile-Argentine lines; and decree No. 4896 of December 14, 1904, to which

were attached the rules regulating all kinds of electrical installations, including light, power, telegraph and telephone lines.

According to decree No. 2410, the rates for international telegrams were:

1) For a message sent from a State telegraph office in Chile to a similar office in Argentine:
   a) For the first 10 words, including address and signature............ 0.65 pesos
   b) For each additional word......... 0.04 "
2) For a message sent from a State telegraph office in Chile to any office of a private telegraph company in Argentine, such company not being included in the Convention:
   a) For the first 10 words, including address and signature............ 0.65 pesos
   b) For each additional word......... 0.04 "
   Plus the charge made by the respective private company.
3) For a message from a State telegraph office in Chile to any office of a private company included in the Convention, or for a message sent to Bolivia:
   a) For the first 10 words, including address and signature........... 0.80 pesos
   b) For each additional word......... 0.06 "
4) For a message originating outside of Chile, sent to a State telegraph office in Argentine, for each word .... 0.24 pesos
5) For a message originating outside of Chile, sent to any telegraph office except the State telegraph offices, or destined for Bolivia, for each word................ 0.30 pesos
6) For a message sent from a State telegraph office in Chile to a point outside of Argentine, with the exception of Bolivia, Paraguay and Uruguay, for each word....... 0.18 pesos
   Plus the additional rate charged by the company transmitting the message to a point outside of Argentine.
7) For press messages, one-half of the rates mentioned under 1, 2 and 3 was charged.

Earthquake and Reconstruction

The annual report of the Minister of the Interior, published in 1907, vividly portrayed the effect of the terrible earthquake that occurred during the night of August 16, 1906, devastating the central zone of Chile. The cities that suffered most severely were Valparaiso, Casablanca, Melipilla, Limache, Quillota, Ligua, Quilpué, Calera and Llay-Llay. Nearly half of the buildings in the city of Vaparaiso collapsed, with the result that a frightful conflagration broke out which could not be controlled for several days. As both the railroad and telegraph lines in the central zone had been destroyed, the Government was for some time powerless to give assistance to the unfortunate people in the devastated localities.

The same report mentions that in order to improve the telegraph service the Administration had commenced to study the advisability of combining the telegraph with the telephone, and was also considering the establishment of public telephone toll stations in the industrial centres of the country.

On January 1, 1908, Chile joined the International Telegraph Union, and sent a delegate to Lisbon to participate in the deliberations of the Congress. The Administration also considered an offer from the Marconi Company to establish wireless telegraph service between Punta Arenas and Valparaiso, at an expense not to exceed £50,000, but no final decision was reached.

On September 18, 1910, the Republic of Chile celebrated the first centenary of its independence. At the end of that year the State telegraph system consisted of 28,411 kilometers of wire, served by 352 offices.

The Decade 1910-1920

It is to be regretted that the history of the telegraph in Chile cannot be completed to the present, due

to the omission of the Telegraph Administration to publish annual reports. It is true that the annual reports of the Minister of the Interior (1910 to 1920) contain some information on this branch of the public service for certain of the provinces; but from such miscellaneous data no comprehensive knowledge of the telegraph for that period can be gathered. The subjoined paragraph, taken from a communication received from the United States Embassy, dated Santiago, September 29, 1923, corroborates the above statement:

"I am directed", writes the Secretary of the Embassy, "to inform you that on receipt of your communication a member of the Embassy staff called at the Department of Posts, Telegraphs and Telephones, and was informed that no separate reports of the Director of Telegraphs had ever been published, and that the annual reports of the Director of Telegraphs for the years 1910 to 1920 were contained in the annual reports of the Minister of the Interior for those years."

The main statistical data for the period 1912-1920 will be found in the appended tables.

TELEGRAPH COMPANIES IN CHILE, YEAR 1920*.

Name of Company	Location of Principal Office	Number of Offices	Kilometers of Wire	Number of Telegrams Transmitted	Value of Telegrams (Pesos)	Value of Plant (Pesos)
I. Companies Furnishing a Public Telegraph Service:						
Compañía de Teléfonos a Bolivia	Tacna	4	685	19,500	266,000	300,000
All America Cables, Incorporated	Iquique	8	1,238	261,200	3,927,000	1,642,000
Telégrafo Comercial	Santiago	104	10,382	1,959,000	2,781,000	2,486,000
Compañía Telégrafo Nacional	Santiago	2	910	140,000	259,000	250,000
The West Coast of America Telegraph Company, Ltd	Valparaiso	11	2,924†	158,900	2,370,000	6,102,000
The Pacific and European Telegraph Company, Ltd	Valparaiso	2	541	66,300	....	1,202,000
II. Railroad Telegraph Service:						
The Anglo Chilian Nitrate and Railway Company, Ltd	Tocopilla	3	117	....	....	....
Empresa del Ferrocarril de Antofagasta a Bolivia	Antofagasta	79	4,175	13,800	26,000	725,000
The Taltal Railway Company, Ltd	Taltal	13	299	19,900	9,000	82,000
The Chilian Transandine Railway Company	Los Andes	4	126	3,900	1,000	111,000
Empresa del Ferrocarril Trasandino por Antuco	Monte Aguila	7	144	....	....	25,000
Compañía de Arauco, Limitada	Coronel	8	91	16,500	....	119,000
Totals: Year 1920	....	245	21,632	2,659,000	9,639,000	13,044,000

* From "Anuario Estadistico de la República de Chile," Vol. III, Year 1920 (Issued in 1922).

† Represents 2,729 km. of lines, of which 2,534 km. are submarine cable.

SUMMARY OF TELEGRAPH STATISTICS OF CHILE
STATE AND PRIVATE—1912-1920

	Year	State System	State Railroads	Private Companies	Total
Number of Offices......	1912	364	277	139	780
	1913	368	295	145	808
	1914	367	336	243	946
	1915	365	385	227	977
	1916	359	390	223	972
	1917	360	410	220	990
	1918	370	415	214	999
	1919	373	426	215	1,014
	1920	374	422	245	1,041
Kilometers of Wire.......	1912	29,015	5,319	14,409	48,743
	1913	29,055	6,267	13,618	48,940
	1914	29,387	6,752	16,855	52,994
	1915	29,440	8,565	16,857	54,862
	1916	29,519	8,993	17,003	55,515
	1917	29,583	9,477	14,387	53,447
	1918	29,600	9,451	18,574	57,625
	1919	29,632	9,427	18,574	57,633
	1920	29,715	9,645	21,632	60,992
Number of Telegrams..	1912	2,455,000	‡12,900	1,128,000	3,595,900
	1913	2,443,000	‡13,500	1,501,000	3,957,500
	1914	2,454,000	‡12,300	1,339,000	3,805,300
	1915	2,521,000	‡12,000	1,842,000	4,375,000
	1916	2,741,000	‡12,500	2,104,000	4,857,500
	1917	3,042,000	‡16,200	2,359,000	5,417,200
	1918	3,223,000	‡18,000	2,811,000	6,052,000
	1919	3,301,000	‡18,200	2,598,000	5,917,200
	1920	3,495,000	‡18,200	2,659,000	6,172,200
Gross Revenue (Pesos).....	1912	2,372,000	22,000	3,908,000	6,305,000
	1913	2,385,000	22,900	4,229,000	6,637,900
	1914	2,503,000	21,000	5,153,000	7,678,000
	1915	2,638,000	20,500	5,474,000	8,126,500
	1916	2,890,000	23,000	6,062,000	8,661,000
	1917	3,170,000	25,600	6,580,000	9,572,600
	1918	3,380,000	27,000	7,316,000	10,615,000
	1919	3,493,000	29,800	7,604,000	10,999,800
	1920	4,537,000	26,200	9,639,000	14,003,200
Value of Plant (Pesos).....	1912	7,248,000	......	11,922,000	19,170,000
	1913	7,335,000	......	12,228,000	19,563,000
	1914	7,085,000	......	13,241,000	20,326,000
	1915	7,241,000	......	13,482,000	20,723,000
	1916	7,593,000	......	12,430,000	20,023,000
	1917	7,617,000	......	7,543,000	15,160,000
	1918	7,703,000	......	9,226,000	16,929,000
	1919	7,720,000	......	11,337,000	19,057,000
	1920	7,825,000	......	13,044,000	20,869,000

‡ Excludes railway service telegrams averaging about 9,000,000 annually, from which no revenue is derived.

STATISTICS OF THE STATE TELEGRAPH OF CHILE—1871-1922.
(Partly Estimated)

Year	Kilometers of Wire	Number of Offices	Number of Telegrams*	Gross Revenue‡ (Pesos)	Value of Plant (Pesos)
1871	4,500	40	124,000	70,000	350,000
1872	4,540	45	129,000	64,000	365,000
1873	4,580	50	265,000	113,000	380,000
1874	4,620	53	315,000	116,000	400,000
1875	4,660	53	276,000	122,000	415,000
1876	4,700	59	159,000†	49,000†	430,000
1877	4,750	62	179,000	91,000	450,000
1878	4,781	68	246,000	81,000	465,000
1879	5,634	99	239,000	114,000	480,000
1880	7,062	102	259,000	121,000	500,000
1881	8,784	108	433,000	163,000	579,000
1882	8,943	116	424,000	162,000	594,000
1883	10,106	120	479,000	187,000	674,000
1884	10,319	124	522,000	199,000	688,000
1885	11,836	148	522,000	194,000	813,000
1886	12,147	150	533,000	202,000	844,000
1887	12,147	155	572,000	213,000	844,000
1888	12,505	160	541,000	190,000	943,000
1889	12,577	182	604,000	205,000	1,036,000
1890	13,355	191	711,000	207,000	1,115,000
1891	13,400	199	792,000	271,000	1,390,000
1892	13,600	207	795,000	300,000	1,670,000
1893	13,794	215	894,000	318,000	1,950,000
1894	14,243	223	1,044,000	366,000	2,230,000
1895	14,788	231	1,159,000	397,000	2,500,000
1896	15,178	239	1,272,000	446,000	2,790,000
1897	15,511	250	1,256,000	412,000	3,000,000
1898	16,052	258	1,182,000	484,000	3,350,000
1899	18,500	266	1,191,000	516,000	3,630,000
1900	20,397	274	1,287,000	548,000	3,900,000
1901	21,522	283	1,371,000	580,000	4,200,000
1902	22,000	290	1,422,000	612,000	4,500,000
1903	22,500	301	1,502,000	645,000	4,700,000
1904	23,432	306	1,319,000	675,000	5,000,000
1905	24,000	310	1,553,000	865,000	5,300,000
1906	25,000	313	2,033,000	1,277,000	5,500,000
1907	26,635	339	2,120,000	1,411,000	5,800,000
1908	27,162	343	2,225,000	1,617,000	6,200,000
1909	27,968	337	2,493,000	1,705,000	6,400,000
1910	28,411	352	2,348,000	2,085,000	6,700,000
1911	28,773	357	2,327,000	2,074,000	6,900,000
1912	29,015	364	2,455,000	2,372,000	7,248,000
1913	29,055	368	2,443,000	2,385,000	7,335,000
1914	29,387	367	2,454,000	2,503,000	7,085,000
1915	29,440	365	2,521,000	2,638,000	7,241,000
1916	29,519	359	2,741,000	2,870,000	7,593,000
1917	29,583	360	3,042,000	3,170,000	7,617,000
1918	29,600	370	3,223,000	3,380,000	7,703,000
1919	29,632	373	3,301,000	3,493,000	7,720,000
1920	29,715	374	3,495,000	4,537,000	7,825,000
1921	30,400	385	3,141,000	4,348,000	....
1922	30,500	404	3,198,000	4,421,000	....

* Paid and official telegrams.
‡ Includes value of official service.
† Paid service only.
‡ Estimated on line length.

CABLE SERVICE

The following companies have played an important role in the establishment and development of the submarine telegraph service of Chile:

1) The India-Rubber, Gutta-Percha, and Telegraph Works Company, Limited.
2) The West Coast of America Telegraph Company, and the West Coast of America Telegraph Company, Limited.
3) The Central and South American Telegraph Company.
4) The All America Cables Company.

The INDIA-RUBBER, GUTTA-PERCHA, AND TELEGRAPH WORKS CO. LTD. was registered in London in 1864 for the purpose of taking over the works of Messrs. Silver and Co. (known as the "Silvertown Company") for the construction of india-rubber insulated cables. By decree of January 31, 1874, the Chilean Government authorized Mr. C. S. Stokes, a representative of the India-Rubber Company, to lay and operate submarine telegraph cables starting from Caldera or Coquimbo and terminating at or near Callao (Peru), and also to establish intermediate cable landing points along the coast of Chile. The Government promised to use its good offices with the Bolivian Government to arrange for a landing point of the proposed cable at Mejillones. It was stipulated that the cable should be in operation within 18 months from the date of the concession.

By a decree of December 18, 1875, Mr. C. S. Stokes was authorized to lay and operate submarine telegraph cables starting from Valparaiso, to connect with the cable already laid from Callao to Caldera, an intermediate landing point to be established at Coquimbo where the cable was to be connected with the land lines to Serena. It was stipulated that this cable should be laid prior to December 31, 1876.

A decree of February 26, 1877, issued to the same company, granted authority to lay and operate submarine cables either from Valparaiso or some other harbor of Chile to the north, and also gave the company permission to establish a schedule of rates. In accordance with the stipulations of the decree, the Chilean Government was to receive two centavos for each word of a paid message transmitted by cable between any of the Chilean telegraph offices. As in the former decree, the Government offered to use its good offices with the Governments of Bolivia, Peru and Colombia, to enable the concessionaire to establish cable landing points along the coast of these republics up to Panama. A second decree, of the same date, authorized Mr. Stokes to lay and operate cables between Valparaiso and Punta Arenas, an intermediate cable station to be installed on the island of Chiloe.

By decree of November 5, 1877, the Chilean Government approved the transfer of all the foregoing concessions to the West Coast of America Telegraph Company, Limited, then represented by E. G. Parsoné.

The WEST COAST OF AMERICA TELEGRAPH COMPANY was incorporated in 1876, its object being to purchase and operate cables on the coasts of Chile and Peru, between the cities of Valparaiso and Lima, as well as to put the latter city into communication with the Western and Brazilian Telegraph Company's system, and thus with Europe by means of the land line of the Transandine Telegraph Company, and the "River Plate" and "Platino-Brazilian" cables. The cables of the West Coast Company had been made by the "Silvertown Company," and were laid by that firm, in seven sections, during 1875 and 1876, the greater part being submerged previous to the actual formation of the West Coast Company. The latter company extended its system by the establishment of land-line communication with places in the interior,

the most important city so connected up being Santiago, which was reached in 1889.

The following cables have been laid by the West Coast of America Telegraph Company:

1875	From	Chorillos	(Peru)	to	Mollendo	(Peru)	514	nautical miles
"	"	Mollendo	"	"	Arica	(Chile)	148	" "
"	"	Arica	(Chile)	"	Iquique	"	128	" "
"	"	Iquique	"	"	Antofagasta	"	264	" "
1876	"	Antofagasta	"	"	Serena	"	456	" "
"	"	Serena	"	"	Valparaiso	"	230	" "
1893	"	Valparaiso	"	"	Talcahuana	"	267	" "

The West Coast of America Telegraph Company continued to work until 1897, when it was reorganized as the West Coast of America Telegraph Company, Limited, registered on April 12, 1897. This latter company is now a subsidiary of the Western Telegraph Company, Limited, which in turn came into existence through a reorganization of the Brazilian Submarine Telegraph Company, established in January, 1873.

The Central and South American Telegraph Company was formed in 1881 by American capitalists, for the purpose of bringing the west coast of Central and South America into direct communication with the United States. The cables, which were laid in 1882, were manufactured by the "Silvertown Company." In 1891 the company extended its system to Valparaiso and thence by land line to Santiago. About this time it purchased the system of the Transandine Telegraph Company (Compañía del Telégrafo Transandino), a local company formed in 1870, which worked a land line between Valparaiso and Buenos Aires (Argentine). The Central and South American Telegraph Co. thus secured independent connection with Montevideo (Uruguay) and Buenos Aires (Argentine), and by other land lines reached Rio de Janeiro (Brazil). The Pacific section of the company operated the following cables:

Year	1891	From	Chorillos	(Peru)	to	Iquique	(Chile)	780	nautical	miles
"	"	"	Iquique	(Chile)	"	Antofagasta	"	264	"	"
"	"	"	Antofagasta	"	"	Valparaiso	"	689	"	"
"	1906	"	Chorillos	(Peru)	"	Iquique	"	846	"	"
"	"	"	Iquique	(Chile)	"	Valparaiso		911	"	"

In 1918 the Central and South American Telegraph Company combined with the Mexican Telegraph Company (formed in 1880 also by American capitalists), the new company taking the name of ALL AMERICA CABLES, INCORPORATED.

PRIVATE TELEPHONE SERVICE

The Introduction of the Telephone into Chile

The history of the telephone in Chile begins in September, 1879, the first year of the war between Chile, Peru and Bolivia, known in South America as "la guerra del Pacifico," which lasted until 1883.

At the outset it would seem that José Dottin Husbands, by birth an American, but in his later years a resident of Valparaiso, could not have chosen a less opportune time for promoting a new and untried enterprise in Chile, as the exigencies of the war had badly drained the finances of the country. However, a kind fate willed it otherwise. His success in overcoming all obstacles was largely due to his unbounded optimism, combined with a bull-dog tenacity. That these were two of Husbands' principal characteristics, the author can bear witness from a personal acquaintance with him during his prolonged stay in the city of Boston, Mass. This acquaintance later resulted in an invitation to the writer to accompany Husbands to Valparaiso and assist in the development of his telephone enterprise in South America.

Fortunately Husbands left a brief account of his early activities in England and the United States. His manuscript, consisting of but a few pages, has been carefully preserved in the archives of the Chili Telephone Company, Limited, of London, whose managing director, William Johnston, placed it, together with a number of equally priceless documents, at the disposal of the author. The following paragraph is a quotation from Husbands' manuscript:

"In the month of May, 1879, J. D. Husbands, having heard of the great success of the telephone in the United States, to which country its use was solely confined at that time, thought it would be of much service to the people of

Chile. He therefore left his family in Chile and went to the United States for the purpose of obtaining and bringing the telephone to Chile, if possible.

"He obtained from Thomas A. Edison his telephone invention in the month of September, 1879. These instruments were at that time the best in use. Mr. Husbands immediately brought these instruments to Chile, late in the year 1879, in connection with a complete central system and at once established provisionally six instruments (connected up to a central station) in the house of Mr. Peyron, Calle Cochrane, Valparaiso, for the purpose of showing that conversations between different persons could be carried on at will."

Prior to his return to Chile, Husbands had entered into negotiations with Thomas A. Edison, or more probably in the main with some representative of Mr. Edison. This appears from a communication sent by the latter to the Hon. L. H. Foote, then American consul at Valparaiso. This is an assignment conveying to J. D. Husbands all the right, title and interests that Edison then possessed in telephones and telephone appliances and in all future inventions of that kind, extending over a period of ten years. It granted Husbands these rights for Chile, Bolivia, Peru and Ecuador. In the closing paragraph Edison authorized the consul to deliver the assignment to J. D. Husbands "on the receipt for me by the Hon. L. H. Foote, American consul at Valparaiso, Chile, of the sum of Forty thousand dollars in gold in accordance with my agreement with the said Foote." The consul, however, did not deliver the assignment to Husbands, as the latter had failed to make the stipulated payment, but, as we shall see further on, that assignment became the property of the Compañia Chilena de Teléfonos de Edison on September 12, 1881.

Probably due to the changes in the patent situation in the United States, Edison granted Husbands a power of attorney, February 27, 1880. This power of attorney was drawn very broadly and explicitly

authorized Husbands "to apply for letters patent in Chile for my Invention of Improvements in Telephones." Another power of attorney, also signed by Edison February 27, 1880, granted Husbands the same right for Peru.

In his manuscripts Husbands frankly admits that, in addition to Edison's carbon transmitter, he imported into Chile various magneto receivers, all of which infringed the claims of the original Bell patent, the property of the Bell Telephone Company. It is quite probable that at the time Husbands was in the United States he had been advised erroneously about the validity of Bell's claims, as the contention between the Western Union Telegraph Company and the Bell Telephone Company over telephone patents had not then been settled.

The reader who may have wondered why Husbands brought Edison's inventions to Chile and applied for a telephone franchise based upon these inventions, is reminded that during 1878-79 the Western Union Telegraph Company had acquired the rights to Edison's telephone inventions and was contesting the patent claims of the Bell Telephone Company which, under the management of Theodore N. Vail, had been reorganized in 1878. The legal contention between the two companies was settled two months after Husbands had arrived at Valparaiso; and on November 10, 1879, the two interested parties signed the famous agreement by which the Western Union Telegraph Company acknowledged that Prof. Alexander Graham Bell was the original inventor of the telephone, that his patents were valid, and that after said date the Western Union Telegraph Company would retire from the public telephone business.

A further proof of Husbands' business sagacity is the document (see Appendix, p. 87) signed by Prof. Alexander Graham Bell on May 7, 1880, making José

D. Husbands his lawful attorney and authorizing him to apply for Letters Patent in Chile for Bell's telephone inventions.

After his arrival in Valparaiso in 1879, Husbands immediately commenced propaganda work through the press. His first article appeared in "El Mercurio" of January 26, 1880. Within a short time he had built a few trial lines in the precinct of the city known as "Barrio del Puerto". To arouse public interest and to silence the scoffers who contended that his claim that persons located at distant points could converse by means of the telephone was only another humbug imported from Yankeeland, Husbands arranged a public demonstration to which representatives of the press were invited. A graphic account of this highly successful trial is recorded in "El Mercurio" of February 21, 1880. In this article it is stated that one of the main impediments met in the construction of telephone lines was the refusal of property owners to grant permission to use the roofs of buildings for the support of the telephone wires. To overcome this objection and to get the free use of the public streets, Husbands applied to the Government for a telephone franchise, based on the Edison inventions, which would give him the right to operate service throughout the entire country. His application was referred to two experts, who, on April 21, 1880, reported favorably. Five days later the President, don Anibal Pinto, at Santiago signed the first Chilean telephone concession. This was granted in the name of Thomas Alva Edison.

Thereafter Husbands set to work to create an operating company and to obtain the necessary working capital. For this purpose he arranged for more public trials and proved the efficiency of the telephone as a long-distance speaker by transmitting speech over a telegraph line between Valparaiso and Santiago. This trial, which took place on April 29, 1880,

was fully reported in "El Mercurio", which also mentioned that the American Minister was present at the first long-distance telephone conversation in Chile, over a line of 180 miles. Despite this achievement, Husbands did not construct any additional lines in Valparaiso.

COMPAÑÍA CHILENA DE TELÉFONOS DE EDISON

On August 25, 1890, a preliminary agreement was signed by J. D. Husbands, Pedro A. MacKellar, Santiago Martin, and the American Consul at Valparaiso, Lucius H. Foote, to acquire the rights granted to Thomas A. Edison by the concession of April 26, 1880. On December 15, 1880, these parties appeared before Francisco Pastene, a notary public of Valparaiso, and in his presence signed the constitution and by-laws of a company to be known as the "Compañía Chilena de Teléfonos de Edison", the life of the company to be ten years with the privilege of renewing the franchise for another ten years. The capital stock was stated to be 200,000 pesos, consisting of 400 shares of 500 pesos each. These shares were taken up as follows:

J. D. Husbands	200	shares
Santiago Martin	50	"
Lucius H. Foote	50	"
Pedro A. MacKellar	50	"
M. MacNeil	50	"

Of the 200 shares subscribed for by Husbands, it was understood at the time that only one-third belonged to him, and that the remaining two-thirds was the property of Thomas A. Edison.

When, on September 6, 1880, Husbands, then general manager of the company, petitioned the municipality for permission to place poles in the streets of Valparaiso, he was faced with the question

as to what compensation, if any, the municipality should receive from the telephone company for the privilege of occupying the public highways. On the ground that the company was obliged to pay Edison 10,000 pesos annually for the use of his invention, the municipality agreed to reduce the tax to 500 pesos per year. A further demand by the municipal authorities for the payment of an additional sum of 500 pesos for the lines already constructed in the "Barrio del Puerto" was refused by Husbands. After protracted deliberation, the municipality issued a permit to the company for the erection of poles in the streets of Valparaiso, valid until July 1, 1882.

In the meantime the general manager was instructed to study foreign telephone systems, with a view of replacing the pole lines with such other improved construction as had been adopted in the principal cities of Europe. The municipality ordered that, failing to fulfill this obligation, the company should pay a tax of 500 pesos per month, commencing July 1, 1880. Nothing further was done in this matter until 1882, when at the session of the municipal council of August 25th, in answer to an inquiry, the acting manager of the company reported that Husbands had gone to Europe and asked that until his return the municipality should desist from enforcing the additional tax.

In his manuscript Husbands writes that he went to Europe in September, 1881, for "the purpose of carrying out the plan of organizing a company with a large share capital to work the entire west coast of South America."

Under date of September 12, 1881, the American Consul at Valparaiso, Lucius H. Foote, certified to the following facts, viz.: that a joint company with a capital of 200,000 pesos, known as the Compañía Chilena de Teléfonos de Edison had been organized in the Republic of Chile; that J. D. Husbands was the

originator of this enterprise, and that under his management between 200 and 300 telephones had been placed in successful operation in the city of Valparaiso. Also that the consul had delivered to the Compañía Chilena de Teléfonos de Edison an assignment of all the telephone rights of Thomas A. Edison in the Republic of Chile.

In addition to the acquisition of the telephone rights of Edison, Husbands also obtained from the board of directors of the Compañía Chilena de Teléfonos de Edison the following power of attorney, dated September 2, 1881:

"Whereas the shareholders of the Company have agreed to empower Mr. José D. Husbands to sell all the property and rights owned by the said company to an association formed, or to be formed, in Europe or in the United States, in accordance with a private document signed on the 26th of the present month of September, 1881, the board of directors of the corporate body, known as the Compañía Chilena de Teléfonos de Edison hereby give full power to José D. Husbands to carry out the transfer of the company to any companies, associations, or persons that shall agree to pay the amount stipulated in the private document subscribed to by all the shareholders on the 26th of the present month of September, etc."

The American West Coast Telephone Company, Ltd.

Equipped with such broad powers, Husbands went to England bent on the organization of a company with a large capital stock. Upon his arrival in London, he quickly succeeded in interesting various parties in the formation of a new company called "The American West Coast Telephone Company, Limited." In a very attractive prospectus the promoters set forth the merits of the proposed organization and stated that the new company had been formed to carry on a general telephone business, purchase valuable telephone rights, build telephone exchanges and private lines, and introduce the telephone throughout the re-

publics situated on the west coast of South America. The prospectus also mentioned that the company would own exclusive rights in recent telephone inventions to be used in the development of the telephone business in Ecuador, Bolivia and Peru. Among these inventions appear those of Edison, Bell, Blake, Gower Bell, Dolbear, Hunnings, Anders, Watson, Thompson, Berliner, Roosevelt, and Husbands. The would-be investor was informed that "the company has also acquired for Chile, Peru, Ecuador and Bolivia the exclusive right to export from the United States all the instruments and apparatus manufactured under the patents owned by the American Bell Telephone Company, and by assignment will own all the rights of the Tropical American Telephone Company, Ltd., the Continental Telephone Company, and the Consolidated Telephone Construction and Maintenance Company, Ltd., which includes the celebrated inventions of Alexander Graham Bell." The concluding paragraph of the prospectus states that the franchise granted by the Government of Chile on April 26, 1880, to Thomas Alva Edison had been purchased by the Compañía Chilena de Teléfonos de Edison prior to the amalgamation of the Bell and Edison telephone interests in the United States.

No less than eleven agreements are quoted which had been signed between the proposed new organization and various inventors and existing telephone enterprises. Among these were contracts with Professor Amos E. Dolbear and Professor Silvanus P. Thompson.

The effort to float this corporation in England was, nevertheless, unsuccessful, and he soon left for the United States. After a short stay in New York, Husbands went to Boston, Mass., then the headquarters of the American Bell Telephone Company, which under date of March 20, 1880, had become the successor of the National Bell Telephone Company.

Before taking leave of the Compañía Chilena de Teléfonos de Edison, which, according to a decree published in the "Diario Oficial" of Santiago, March 29, 1884, was liquidated early in 1884, another decree, issued at the time that Husbands was general manager of the company, deserves mention. It is found in the "Boletin de las Leyes", Santiago, May 6, 1881, and refers to the request made by the company to permit its directors to make certain changes in the first draft of the by-laws signed December 15, 1880. As a result of this request article 28 of the by-laws was modified to read:

"Every six months the company shall set aside from the revenue a certain sum to be voted upon by the board of directors for the formation of a maintenance fund, the total amount not to exceed 5000 pesos."

By a stroke of good luck the writer obtained a set of photographs taken by Husbands showing the interior and exterior of the building occupied by the first telephone exchange in Valparaiso, also the switchboard, operating room, and staff, including Mr. Husbands as manager. Of particular interest is the photograph of the exterior of the building which bears the following legend:

"CIA CHILENA DE TELÉFONOS DE EDISON DE VALPARAISO. Communicación diaria y nocturna con Valparaiso, Santiago.

Se reciben Mensajes para todas partes del Mundo."

(Communication day and night with Valparaiso, Santiago. Messages received for all parts of the world.)

These photographs were brought by Mr. Husbands in 1881 to one of his New York friends who kept them as a souvenir of the first telephone exchange installed in the Republic of Chile.

LA COMPAÑÍA DE TELÉFONOS DE LA COSTA OCCIDENTAL

(The West Coast Telephone Company)

With his characteristic energy, Husbands worked indefatigably during his visit to the United States, and succeeded in winning the support of some well-known American telephone men, such as H. L. Storke, later president of the Empire State Telephone Company, George W. Piper, Albert P. Sawyer, and O. E. Madden, assistant manager of the Bell Company under Theodore N. Vail. With the powerful assistance of these people, the West Coast Telephone Company was incorporated in the State of New York on September 20, 1884.

The charter provided that the capital stock of the company should be $1,000,000, divided into 10,000 shares of $100 each. Article 2 of the certificate of incorporation read as follows:

"The general route of the said line, or lines, of telegraph is from a point in the city of Concepción, in the Republic of Chile, thence through said Republic of Chile, Bolivia, Peru, Ecuador and Colombia, and the several villages, cities, and towns, situated in said several states, and thence to a point in the city of New York in the State of New York, and through all intermediate points and connecting said villages, cities, and towns . . . . the object of establishing said line, or lines, being to transmit telegraphic and telephonic signals, or messages, between and connecting such points . . . ."

Before the charter of the West Coast Telephone Company was registered in the United States, Husbands had left for Chile, where he arrived March 22, 1884. Referring to his work in Valparaiso, he writes in his manuscript:

"At that time the Cia Chilena de Teléfonos de Edison was being liquidated and on July 28 of the year (1884) Mr. Husbands purchased the same with all its property, rights, fran-

chise, etc. On May 23, 1884, he had made application for a privilege (franchise) admitting the Edison claims, but claiming that which was new or the improvements which he owned or controlled by his purchases or arrangements made in Europe and in the United States. This privilege was granted to Mr. Husbands on July 28, 1884, for a term of eleven years, and having purchased the Cia Chilena de Teléfonos de Edison with all its rights, he incorporated it with the West Coast Telephone Company, which is now operating a general telephone business, owning all the master patents."

Mr. D. V. Navarro of Santiago, Chile, is our authority for stating that:

"Husbands entered Valparaiso on his second trip to Chile in company with electricians John and Joseph Connolly, and this trio started the West Coast Telephone Company, whose share capital was largely owned by Americans. The certificates of stock carried the photographs of Thomas A. Edison and Joseph D. Husbands. The new company was installed on the second and third floors of the premises owned by Kendall and Company, namely A. Pratt Street, No. 73, a subcentral being installed in Victoria Street. The main exchange was originally equipped with a Gilliland switchboard which was soon replaced by two Williams' slide switchboards. Two years after opening the new exchange the company replaced the Williams' board by a Western Electric magneto switchboard and introduced Blake transmitters."

A search of the files of the "Diario Oficial" of Santiago brought to light the following decrees relating to the Compañia de Teléfonos de la Costa Occidental:

1. Decree of May 30, 1884, permitting the company to deposit all of its imported material in warehouses other than those of the Government, subject, however, to the rules and regulations of the customs laws.
2. Decrees of May 14, 1886, giving authorization to G. S. Hansom to act as general agent for the company in Chile.
3. Decree of March 18, 1887, granting a ten-year concession to H. A. Hubon, representative of the West Coast Telephone Company, to construct a telephone line between Concepción, Penco, and Tome.
4. Decree of July 13, 1887, granting a three-year conces-

sion to the West Coast Telephone Company to string a telephone wire on the state telegraph poles between the capital and Valparaiso. After the lapse of the concession, this telephone wire and instruments shall become the property of the Government. This franchise was granted upon the request of the Director General of Telegraphs, who required an additional means of communication between Santiago and Valparaiso.

5. Decree of July 22, 1887. A concession, similar to the last mentioned, for attaching a metallic telephone wire to the state telegraph poles between Santiago and San Antonio.
6. Decree of September 29, 1887, granting permission to Joseph Sitzenstätter to act as general agent for the West Coast Telephone Company.
7. Decree of December 31, 1887, granting a two-year concession for stringing a metallic telephone circuit on the state telegraph poles between Mocha and San Pedro.
8. Decree of February 6, 1888, permitting the West Coast Telephone Company to construct a telephone line connecting Concepción, Lotari, and Coronel.
9. Decree of May 4, 1889, giving permission to the West Coast Telephone Company to construct a line between Santiago and Valparaiso, via Curacavi and Casablanca, a total of 128 kilometers.

The first official statistical data concerning the West Coast Telephone Company are found in the annual report of the Director General of Telegraphs, R. Vial, issued at Santiago, May 11, 1889, namely:—

"The company maintains exchanges in seventeen localities, the number of subscribers is 1,444 and the total length of telephone wire 1,910 kilometers."

However, the most reliable data concerning the West Coast Telephone Company are given in the prospectus of the Chili Telephone Company, published in London on August 15, 1889:

"This Company (the Chili Telephone Company) has been formed for the purpose of acquiring and extending the property and business in the Republic of Chile of the West Coast Telephone Company. That Company is an American corpora-

tion which commenced its business in Chile in the early part of the year 1885 and has since been successful in obtaining from the authorities there concessions or licenses conferring extensive privileges, in pursuance of which telephone centers have been established at the following important cities in the Republic:

Valparaiso	Chillan	Serena
Santiago	Talcahuano	Coquimbo
Concepción	Talca	Tomé
Iquique	Pisagua	Penco
Coronel	Lota	

"According to latest advices there were 2,187 telephones in use, of which 1,084 were in Santiago and 466 in Valparaiso. A new line by the shortest route (115 miles) between Santiago and Valparaiso is in course of construction.

"An independent examination of the West Coast Telephone Company's books was made in April last, when it was ascertained that on March 31, 1889, there were 1,915 paying subscribers and the net profits of the Company in Chile were at the rate of £11,160 per annum. Since then there has been an increase of 272 subscribers and the net revenue may now be assumed to be at the rate of £12,000 per annum.

"The property of the West Coast Telephone Company in the Republic of Chile, Ecuador and Peru, has, by contract dated June 19, 1889, between F. A. Jones and W. A. Pittman, been agreed to be acquired by Mr. Pittman at the price of £150,000 in cash, and by a contract dated July 9, 1889, made between himself and the Company, he has agreed to sell to the Company the concessions and property in Chile, together with the plant, material, and assets of every description, with the good will of the business there, for the sum of £150,000 in cash, reserving to himself the concessions and whatever business there may be in Ecuador and Peru."

A former employé of the West Coast Telephone Company recalls that during the first two years of the existence of that company the outside wire plant consisted of only a few trunk lines to Quilpué, a town about 15 miles distant from Valparaiso, but that its trunk lines ultimately reached Santiago. The conductor used on this line was of No. 8 galvanized iron to Casablanca, whence it was continued as a metallic circuit to Santiago.

COMPAÑÍA NACIONAL DE TELÉFONOS

(National Telephone Company)

This company was formed in 1886 by Messrs. Felipe Tupper, Ismael Izquierdo and Luis E. Zegers, for the purpose of building a telephone line connecting Valparaiso, Santiago and Concepción, and installing telephones in these cities. The apparatus was of French construction.

In 1890 the plant was taken over by the Chili Telephone Company, Limited. The first annual report of the directors of the Chili Telephone Company, dated March 31, 1890, refers to the National Telephone Company as follows:

> "Negotiations have lately been opened for the sale to this Company of the property, plant, and business of the National Telephone Company of Chile in Santiago and Valparaiso, and the directors have been advised by cablegram of the purchase of the whole for £36,000.
>
> "That company was the only competitor with this Company . . ."

The only official document which the writer has found relating to the Compañía Nacional de Teléfonos is in a collection of laws called "Boletin de las Leyes, 1886", in which, under date of December 18, 1886, is recorded the granting of a concession to this company to place poles along the public roads for the purpose of constructing a telegraph and telephone line connecting Valparaiso, Santiago and Concepción.

THE CHILI TELEPHONE COMPANY, LIMITED

The main data contained in the prospectus of the Chili Telephone Company, Ltd., published August 15, 1889, are set forth above at page 45.

This company was registered in London, June 28, 1889, with an authorized capital of £250,000 (consisting of 50,000 shares at £5 each), for the purpose

of acquiring and extending the property and business, in the Republic of Chile, of the West Coast Telephone Company, for which it paid £150,000 in cash.

From a circular issued by the Board of Directors on November 13, 1891, we learn that a dispute had arisen between the West Coast Telephone Company of America and certain of its shareholders, who through an injunction had attempted to restrain that company from disposing of its property to the Chili Telephone Company. The suit was settled by arbitration. While the litigation was pending, the business of the West Coast Telephone Company was carried on by the Chili Telephone Company.

Notice of the first ordinary general meeting of the Chili Telephone Company was published on July 29, 1890, signed by its secretary, Mr. Edmund Petley, who faithfully served the company until his death in 1913. The report of the directors, covering the period from May 1, 1889 to March 31, 1890, is a very valuable document, and discloses the farsightedness and sagacity of the men who had devoted themselves to the success of the new enterprise. This is proven by one of their first acts, the acquisition of the National Telephone Company, then the only competing company in Chile, which they purchased for £36,000. The subjoined statistics are given in evidence of the satisfactory progress of the business:

	May 1, 1889	March 31, 1890	Increase
Number of Subscribers...	2,070	2,868	798
Gross Revenue	$225,357	$300,346	$74,989
Miles of Wire............	2,523	3,320	797

Another interesting item is the historical sketch, kindly furnished to the writer by señor don D. N. Navarro of Santiago, who in January, 1890, entered the services of the Compañía Nacional de Teléfonos in Valparaiso, but left that company a few months

later to accept a more important position with the West Coast Telephone Company. We thus have the account of an eye witness of the telephone events that transpired in Valparaiso during 1890. Mr. Navarro writes:

"At the beginning of March, 1890, the West Coast Telephone Company showed a great rush of work and activity, and a number of the old employés were changed. At the same time there arrived a large amount of new telephone material. What had happened? We were told that the West Coast Telephone Company had been sold to an English syndicate. Shortly thereafter a reorganization of the West Coast Telephone Company took place. Our general manager, Mr. Hanson, resigned and was replaced by Mr. F. W. Jones, while Mr. Cooper was made general manager of the exchange in Concepción. A new room was constructed above the third story of the telephone building, measuring 5 x 10 meters, with plenty of light on three sides and a rather low roof. This, we were informed, was to be the Valparaiso central office of the new English company. In this room we set up four Standard switchboards and completed the entire installation within a month's time. The Santiago exchange also received new switchboards. Simultaneously with these changes of equipment the management proceeded with the construction of new lines to Santiago and Casablanca.

"About the middle of 1891 the Chili Telephone Company acquired the Compañía Nacional de Teléfonos, whose principal officers were Mr. Frederick Kerr (British Vice Consul), general manager, and Mr. Sitzenstätter, general superintendent."

The second and third annual reports of the directors of the Chili Telephone Company, covering the fiscal years ending March 31, 1891 and 1892, are historical documents, revealing the consequences of the internecine conflict between the Balmacedists and the Congressists; and for this reason a brief statement of the political events of that period is required.

The Civil War Period

Don José Balmaceda, elected President of the Republic of Chile on September 18, 1886, is famous in the history of that country, as a most progressive and

liberal ruler, whose political aspirations are summed up in the slogan "Chile for the Chileans", and who stood for efficiency—rather than nepotism—in public positions and the raising of the standard of public education. These policies were bitterly opposed by the church, the influential aristocrats of the country, and the press of England and the continent, since the realization of the President's ideals threatened seriously to affect the exploitation of Chilean wealth by foreign nations. Driven to the step by constantly increasing parliamentary obstruction, Balmaceda, in January, 1890, virtually made himself a dictator by appointing a cabinet composed exclusively of his personal supporters, and placing at its head San Fuentes, a person regarded with particular hatred by the political opponents of the President. Although shortly thereafter Balmaceda dismissed San Fuentes and selected another cabinet, the feeling of hostility grew rapidly worse and finally culminated in a vote passed by the Congress, deposing Balmaceda and appointing a new Congress headed by Jorge Montt, who continued in office until September, 1896. Thus a bitter civil war broke out between the adherents of Balmaceda and the Congressists, who had won over to their side the powerful Chilean navy. The principal events of the war, which terminated with the suicide of Balmaceda on September 18, 1891, were the severe fighting close to Pisagua, which was bombarded by the Congressists and surrendered on February 9, 1891; the battle of Pozo Almonte on March 7, 1891; the victory of the Congressists at Concon; and finally the occupation of Valparaiso after the defeat of the Balmacedists at Las Cadenas on August 28, 1891.

Bearing in mind these events, we now return to the second and third annual reports of the directors of the Chili Telephone Company. The second opens with the statement that an action pending in the Chilean courts between the company and a small

minority of the shareholders, was ready for decision when, by order of the Government, the courts were closed. Paragraphs 4, 5, and 11 read:

"After the outbreak of the civil war the business of the Company was stopped by order of the Government, which has since had the entire use of those of our lines situated within the districts remaining under its control; but business has been resumed for the public at Iquique and other stations in districts held by the Congress party. On the 31st of March, when the present account ended, the public service at Santiago had been suspended for one month and eighteen days. For the loss of business the Government will compensate the Company, and $62,000 had, on the 31st of March, been received on account of such compensation."

"The Company's property has sustained damage only in the province of Tarapaca. The Ports of Iquique and Pisagua were bombarded, and several battles fought on land. Some of our instruments were destroyed and some poles and wires cut down; for this, both parties are held to be directly responsible, as well as for loss of business between January 20th and March 10th, during which period the telephone service there was suspended by order of the authorities."

"In view of the continuation of the Civil War—with very indefinite prospects of its ending * * * the Directors recommend that no dividend be paid until peace is re-established and the future of the Company becomes more secure."

The third annual report calls attention to the unfavorable result of the business during the period ending March 31, 1892, the gross revenues from the service having decreased from $387,110 in 1890-1 to $378,830 in 1891-2, a decline of $8,280. It is explained, however, that this decrease was solely due to the political and other abnormal calamities which befell the Chilean nation; also that the civil war in Chile was at an end, and that the industrial as well as the political position of the country was steadily resuming a more settled and prosperous character. Furthermore, the directors point out that the above decline in revenues is very small when it is remembered that the system of the company was seized by

the Government and its use by the public was suspended for eight months; while the destruction of its poles and lines by the returning troops of the late President (Balmaceda), by extensive incendiary fires, and by a snowstorm such as had not been known in Chile for a century, delayed the resumption of the ordinary business of the company. Despite all these drawbacks, the number of subscribers served at the end of the report year was nearly equal to the number before the civil war began.

The most noteworthy achievement of the company during the year under consideration was a 10-year contract by which the company received the sole right to supply telephonic communication to the Government. Similar contracts were also signed with the municipalities of Santiago and Valparaiso, all of which materially strengthened the position of the company in Chile.

Finances and Rates

Due to the depreciation in the sterling value of the Chilean peso from 19 d. on March 31, 1892, to 15 d. on March 31, 1893, the available income in English currency was considerably reduced, so that the directors of the company found it imperative to increase the rates. This action resulted in a loss of subscribers, the aggregate number in 1894 being 3,987 as compared with 4,024 in the preceding year. While the increase in the rates augmented the revenue, notwithstanding the smaller number of subscribers, the continued depreciation in the sterling value of the peso deprived the company of any benefit from the higher rates. This depreciation in the currency was accompanied by the world-wide fall of prices in the three years following 1893, which made necessary an era of economy. Thus many telephone subscribers in Chile were forced to discontinue service, which, except in the important business centers of the republic, was

at that time regarded as more or less of a luxury. In the face of the general depression the directors of the company instructed their manager in Santiago further to increase the tariff. In this connection the reader is referred to the schedule of telephone rates as published in "La Nación" of Santiago, December 14, 1921, from which the subjoined data are taken:

Telephone Rates from	1887	to	1892..100	Pesos	per	annum
"	1893	"	1901..140	"	"	"
"	1902	"	1907..170	"	"	"
"	1908	"	1911..200	"	"	"
"	1912	"	1920..250	"	"	"
"	Oct.	1,	1921..275	"	"	"

That the company was forced to increase its rates in 1892 in order to protect its interests is corroborated by the fact that the Government advanced the tariff of its railways 25%, the gas companies increased their rates by 50%, while all kinds of wages, as well as rents, advanced by an average of about 50%. In other words, everyone who had anything to sell in Chile sought to protect himself from the depreciated value of the paper money by securing a larger payment in that money.

A Decade of Development

The 10-year period from March 31, 1894, to March 31, 1904, was a decade of slow but constant development in the business of the Chili Telephone Company. This is apparent from the following comparative statistics:

	March 31, 1894	March 31, 1904
Number of subscribers..	3,987	5,814
Miles of wire...........	6,169	9,884
Gross telephone earnings	504,188 pesos	916,542 pesos
Net telephone earnings.	£10,448	£33,687
Interest, Reserve, etc....	£6,920	£16,490
Dividend paid	None	£14,695
Undivided Profits	£3,528	£2,502

The peaceful settlement of the boundary dispute between Chile and Argentine in 1902 aided greatly

the development of the business of the Chili Telephone Company. This fact is referred to in the Report of Proceedings at the 14th ordinary general meeting, held July 16, 1903:

"The settlement with the Argentine in May of last year, and the subsequent delimitation of the boundary brought about a favorable reaction. The financial condition in Chile has since visibly improved. Commerce and industry are more active and business prospects generally are better. Our lines are being gradually carried to the smaller towns which give promise of paying business, and additional wires are being erected to meet the growing inter-town traffic."

Of particular interest, however, is the paragraph which refers to the proposed change from aerial to underground construction in the city of Santiago:

"We mentioned last year that we were arranging to put our lines underground in the central part of Santiago. This work is, for the present, postponed in consequence of the proposed law, for regulating electrical services, not yet being passed by Congress. It is not expected that the newly elected municipality will take the matter up in the interest of the city."

Legal Restrictions

The law, mentioned in the above paragraph, was published in Santiago on August 4, 1904. It proved to be of vital importance to the Chili Telephone Company at the time its concessions expired in May, 1911, and is given below:

Law No. 1665, published in the Diario Oficial No. 7971, August 4, 1904.

Article 1. Concessions for the installation of electrical companies organized to furnish a public service, likewise authority to occupy the National or municipal ground, must be obtained from the President of the Republic.

As regards the construction and operation of such companies, also electrical lines, it is the duty of the president to supervise them and prescribe the conditions of safety to be employed.

Article 2. Permits for electrical underground installations shall be given for a period of 20 years, and for electrical aerial

installations the life of such permits shall not exceed 10 years.

Article 3. In the cities of Santiago and Valparaiso, and in all places where there exist electrical railways, the telephone, electric light and power lines shall be placed underground within an area to be determined by the president.

All existing lines must be placed underground within 4 years, excepting lines exclusively used for electric railway purposes.

(Signed) GERMAN RIESCO
M. E. BALLESTEROS

After the issuance of the above law the Chili Telephone Company, to protect the future development of its business, petitioned the Government for a new general concession. The reason for this request was that prior to 1904 all concessions for the installation of telephone plants had been granted by the various municipalities, or by local authorities in the case of rural areas. Now it is easy to understand that this kind of procedure had led to many abuses through the bargaining between the company's representatives and the various municipal bodies which changed their membership constantly. These conditions had become quite serious, and it was at the suggestion of the company that the Government took the question of the granting of concessions out of the hands of the municipalities and passed the decree No. 3823 of October 7, 1904 signed by M. E. Ballesteros, which contained the following provisions:

1) Permission is hereby granted to the Chili Telephone Company, Limited, to maintain the telephone installations that already exist in the cities of Iquique, Serena, Coquimbo, Viña del Mar, Los Andes, San Felipe, Talca, Chillán, Concepción, Talcahuano and Traiguén, and to continue to use the national property that the company at present occupies with its exchanges in the above named cities. This permission is for a term of 10 years.
2) The same permission is granted to the company for the telephone exchanges in the cities of Santiago and Valparaiso and the national property which these exchanges occupy at present.

Paragraph 3 of the decree states that the preceding paragraph does not apply to those precincts of the two last mentioned cities that are to have ducts for placing the wires underground.

A later decree, issued in the same year, definitely fixed the time when the underground work must be completed as June 16, 1908.

At this point it is merely a matter of justice to the Chili Telephone Company to add that, although the Government had passed the above mentioned law, the company was unable to proceed with the laying of the underground ducts in Santiago until the new sewerage system built by the municipality had been completed.

By July, 1905, the business of the Chili Telephone Company was well organized, and in that year the company paid a dividend of 8% to the shareholders. From July, 1905 to July, 1906, the increase in subscribers amounted to 966, exceeding the gain in any previous year, and brought the aggregate number of subscribers to 7,270. To meet the demand for telephone communication the company had to enlarge considerably its trunk line system.

Earthquake and Reconstruction

Only four weeks after the meeting of the shareholders in London, which closed with the confident assertion by the chairman that "our business is being ably and energetically managed in Chile, and I think we may look forward to its continued prosperity", there occurred on the evening of August 16, 1906, the terrible earthquake disaster which caused great loss of life and property in the central portion of Chile. The city of Valparaiso and other smaller towns were laid in ruins, and the offices and plant of the company therein completely wrecked. Seven of the employés were killed in trying to escape from the telephone ex-

change in Valparaiso. By permission of the authorities the company set up a wooden shed in the street in front of the wrecked building in Valparaiso and a department was opened to provide food for the employés. Santiago also suffered very seriously, but fortunately the telephone plant there escaped with comparatively small injury. Due to the energetic measures taken by the general manager of the company, Mr. William Johnston, telephone communication between Santiago and Valparaiso was reëstablished within a fortnight after the disaster and the work was commenced of joining up those subscribers who had been able to establish themselves in temporary quarters. That the majority of the subscribers had been reconnected by March 31, 1907, is indicated by a comparison of the total number of subscribers on that date with the number on March 31, 1906. There was a loss of but 155 subscribers, i. e.:

March 31, 1906	7,270
March 31, 1907	7,115

By the middle of the year 1908 the business of the company had prospered to such an extent that it was "larger than before the earthquake disaster of 1906." To meet the growing demands for service a metallic copper circuit had been completed to the south, joining Santiago with the Tacna district, and finally, after a postponement of several years on account of the laying of the new sewerage system, work was begun in replacing the overhead lines in the central portions of the city of Santiago with underground cables. This work progressed slowly during the next two years. Further to improve the service, the company installed a multiple switchboard in the Valparaiso exchange.

On September 13, 1910, the Republic of Chile celebrated the centenary of its Declaration of Independence. As that year was one of much activity and progress throughout the country, the business of the

Chili Telephone Company progressed rapidly. A thousand subscribers were added during the report year, calling for an increase of over 1,900 miles of overhead wire. Likewise, two new telephone districts had been developed, namely, Tocopilla in the north and Malleco in the south.

Revision of Concessions

Early in 1911 the management of the Chili Telephone Company petitioned the Government for the enactment of a law which would equalize the different durations of the various concessions that had been granted to the company up to that time. The Government referred this petition to the Director General of Telegraphs and to the Municipal Council of Valparaiso, with instructions to report what action should be taken. The result was that in May, 1911, President Barros Luco issued a decree which granted the Chili Telephone Company the renewal of all former concessions for another period of 10 years, so that all franchises would expire on May 6, 1921. A translation of the decree is subjoined:

Santiago, May 10, 1911.

1) The periods of the duration of the various concessions granted to the Chili Telephone Company, Limited, to maintain electrical installations in the territory of the Republic, are hereby decreed expired.
2) From the date of the present decree there shall be in force the 10 year periods to which reference is made in Article 2 of Law No. 1665 of August 4, 1904, for all concessions that have been granted, or may hereafter be granted, to the above named company, so that all concessions, whatever may be the date of their commencement, shall expire on the same date.
3) The Director General of Telegraphs is hereby authorized, as the representative of the Municipality, to sign the document that shall embody the present decree.

(Signed) BARROS LUCO
RAFAEL ORREGO

From March 31, 1911 to March 31, 1913, the number of subscribers increased from 9,919 to 12.651, a gain of about 27%. Because of this increase and the acquisition of the plant of the Ecuador Telephone Company in Guayaquil, to which the Chili Telephone Company had acted in an advisory capacity for some years past, it became necessary to secure additional capital.

About the middle of the year 1912, señor don Rivera, Minister of the Interior and later a member of the Senate, issued a decree which ordered the Chili Telephone Company to construct underground ducts in a limited zone of the city of Santiago.

A competitor to the Chili Telephone Company appeared when, on December 17, 1912, the Minister of Finance approved the organization of the "Compañía Nacional de Teléfonos". The history of this company will be taken up later on.

The year preceding the outbreak of the world war is covered by the report of the directors of the Chili Telephone Company published in July, 1914. Two noteworthy events are mentioned, the completion of the new building for the central office in Santiago, and the acquisition of a small telephone business in the southern Cautin district. After the absorption of the latter undertaking, the company's system embraced all the principal towns from Santiago to Temuco.

During the first year of the world war the number of subscribers fell off about 6%, due to the giving up of telephone service in consequence of enforced economy and bad business caused by the closing of the principal markets for the export of nitrate, Chile's main source of revenue. Nevertheless, the company continued to extend its plant by building several trunk lines in the central and southern districts, and enlarged its underground system in Santiago. It also

purchased ground for the erection of new exchanges in Viña del Mar and Rancagua.

The Ibañez Law

A very important event which caused the company considerable annoyance at the expiration of its concessions in May, 1921, was the enactment of the so-called Ibañez Law, No. 771 issued on March 15, 1916. This was in every sense of the word a Draconic piece of legislation. It attempted to prescribe the rates to be charged the customers of any electrical enterprise working under a concession in accordance with Law No. 1665 of August 4, 1904. A translation of the Ibañez Law follows:

Article 1. Any enterprise which has for its object the supplying of a public service (transportation, telephone, electric light or power) and whose rates have not been approved either by a law or decree, or fixed by a contract or a municipal franchise, shall submit its tariffs for the approval of the President within 30 days from the date of the present decree. All electrical enterprises hereafter created shall submit their rate schedules to the President 30 days in advance of the date set for the commencement of service.

Article 2. When the rates have been fixed they cannot be changed except with the approval of the President.

Article 3. Electrical enterprises that disregard article 1 of the present decree, or that charge rates higher than those approved by the President, shall be refused a renewal of their concessions, unless such renewal is especially authorized by the law of the Republic; but such action does not prevent the Government from exercising its right to declare that a concession has expired or that it is annulled.

Article 4. Prior to his approval of the rate schedules, submitted to him by any electrical enterprise, the President shall obtain a report from the Director General of Telegraphs and from the Mayor of the Municipality in which are the headquarters of such enterprise. If this report is not received within a fortnight, the President is authorized to determine the rates without taking any other action.

Article 5. No concession shall be granted, extended or renewed, and no permit shall be given for the construction and maintenance of telephone lines, unless the concessionaire allows a rebate of 50% on all official and municipal telephones in cities in which a telephone service already exists or may be established.

(Signed) SANFUENTES
M. IBAÑEZ

In accordance with the above law the President signed decree No. 2404, Santiago, June 10, 1916, which established the following rates to be charged by the Chili Telephone Company to its subscribers in the city of Santiago, the rates being based upon an exchange value of 18d. to one Chilean peso:

a) For a direct line not exceeding 2 kilometers from the central office	100 pesos per annum
b) For each excess kilometer of line, in addition to the rates mentioned under "a"	10 " " "
c) For an extension line within a distance of five blocks from the subscriber's station	40 " " "
d) For an extension line within the same building	20 " " "

The Chili Telephone Company did not comply with the above law, alleging that it was contrary to the Constitution of the Republic of Chile, which grants to every inhabitant freedom of industry and commerce (la libertad de la industria y del comercio). The company also claimed that the Ibañez Law violated the fundamental law of electrical services, dated August 4, 1904, which contained no provision authorizing the Government to fix the rates charged by companies working under a concession. These contentions were sustained by a decision of the "Consejo de Defensa Fiscal" (legal department of the exchequer), and were also declared well founded by the Minister of the Interior, don Louis Izquierdo, in the session of

the Senate of October 18, 1910. In reply to an article published in "La Nación" in 1921, charging non-observance of the Ibañez Law by the company, the latter frankly declared that compliance with the rates prescribed therein would have forced it into bankruptcy ("se había colocado al borde de la ruina").

The records of the war period show the fact that the company was actively engaged in improving and expanding the telephone service. In 1916 it bought a small independent telephone concern operating in Constitución and finished the central battery installation at Valparaiso. In 1917 it took up the problem of introducing automatic switchboards, provided the Government would give such guarantees as would make the company's future position in Chile secure.

By March 31, 1918, the aggregate number of subscribers had risen to 15,420, served by 216 exchanges and 26,607 miles of wire. Bearing in mind the continuous growth of the business and the demand for modern switchboard equipment, the directors of the company voted to increase the authorized capital from £360,000 to £500,000.

Proposed Revision of Concessions

The next annual report, presented at the 30th ordinary general meeting of the shareholders, at London, July 9, 1919, voices the hope that the company may look forward to a long period of peace and prosperity, as the world war had ended with victory for the Allies. As in the previous year, the increase in the mileage was considerable, due to the building of 35 new trunk lines. In addition the overhead wire in Santiago, Valparaiso and Concepción had been changed to underground. Mention is made of the completion of the new central office building in Valparaiso, and of the fact that all preliminary measures had been taken for the installation of the automatic switchboard

which was then in course of manufacture by Messrs. Siemens Brothers of London. The management also referred to the opening of the telephone business in the Antofagasta and Calama districts, the preparatory work having been finished during the year. The keynote of the report, however, is contained in the following paragraph:

> "Our aerial concessions will shortly expire and negotiations with the Government for their renewal are satisfactorily advanced."

This statement referred to the petition of the Chili Telephone Company, made by their representative in Santiago, señor don Antonio Huneeus, to the Minister of the Interior, March 1, 1919, a translation of which is subjoined:

1) By the decree of May 8, 1911, embodied in the law of May 10 of the same year, the concessions which the Chili Telephone Company received for aerial exchange installations had been extended for 10 years, with the proviso that all concessions obtained thereafter shall expire at the end of the 10 year period. No mention is made in the decree of the concessions which the company had obtained for underground installations because, at the time the decree was issued, the period for which these concessions were granted had scarcely commenced and would not expire until 20 years thereafter.

2) The actual situation of the concessions now held by the company is as follows:

   Nearly all concessions for overhead lines expire May 10, 1921. Others such as the concessions for Concepción, Talcahuano, Sauces, Angol, Cauquenes, Parral, Cautin, Valdivia, obtained by decrees of September 6, 1912, May 23, 1914, and July 9, 1915, extend the life of these concessions to 1922, 1924, and 1925 respectively, as it is expressly stated that they are given for 10 years; on the other hand all concessions for underground installations are for 20 years from the date of the concession.

3) It is plain therefore that all overhead line concessions expire May, 1921, also that those for under-

ground plants go far beyond that date. Moreover, the 20 year periods granted for the construction of underground plant in Valparaiso, Providencia, Talca, and Concepción, have not even commenced to run because the work in the above named places is still going on and has not been finished, due first to the execution of various public works by the municipalities, such as the construction of sewerage systems, etc., and secondly to the impossibility of the company's getting the underground cables during the world war. Consequently, some of the concessions for overhead lines go beyond May, 1921, but none of them continues to the expiration of the concessions for underground plants.

4) It is also evident that uniformity of telephone service requires uniformity in the periods for which concessions are granted.

5) To avoid any interruption of the service the company desires to have all its concessions made uniform by a new law to be enacted by the Government.

6) It is the intention of the company to improve greatly the operating plant and to extend its telephone facilities to various cities that are at present without such service, but in order to obtain the necessary capital for carrying out this work the company must obtain assurance from the Government that the concession for the major portion of the existing installations is not to expire at an early date.

7) The company therefore submits to the Government the following plan:

To declare that all concessions now held by the company shall expire with the issuance of the new concession asked for, which request is in accordance with the action of the Government at the time the original concessions were renewed by the law of May 10, 1911.

This petition was referred by the Minister of the Interior to the Director General of the National Telegraphs, señor don Luis E. Cifuentes, with instructions to advise the Minister. The Director General of Telegraphs reported his findings to his superior on May 6, 1919. This report is a very instructive document, revealing the Government official policy of monopolizing all private electrical services; and it also shows that the

Director General had at various times discussed this subject with the representatives of the Chili Telephone Company and found them very willing to sell their plant to the Government provided the latter would consent to safeguard their interests.

Government Policy Regarding Concessions

Acting upon the advice of the Director General, the Minister of the Interior on May 15, 1919, communicated with the company, and informed the latter that the Government at the proper time intended to take over all public services for which private concerns had obtained concessions, especially all private telephone and telegraph installations, but that a decision of such far-reaching consequences required more time and study. The Minister also expressed his willingness to extend the concession of the company on the terms embodied in a decree which he had submitted to the Government. However, as the existing concession had still two years to run, he thought that during this time a final decision would be reached. Meanwhile, he would be glad to receive from the company further suggestions which might help the Government to formulate a definite plan conceived in the spirit of fair-dealing and justice that had always characterized its relations with the company. In furtherance of this policy the President, by decree No. 3626 of September 17, 1920, appointed a commission to decide whether the Government should purchase the undertaking of the Chili Telephone Company, or grant it a renewal of the concession expiring in May, 1921.

Recalling the assertion of the Minister of the Interior that the Government intended to monopolize the telephone service, the question may well be asked whether such decision derived its origin from political considerations in favor of a centralization of the powers of the State, or whether it was the outcome of a general dissatisfaction with the telephone service. A

perusal of the newspapers of Santiago and Valparaiso discloses the existence of a pronounced feeling of dissatisfaction with the telephone service furnished by the Chili Telephone Company, especially among a class of subscribers who represented important business interests, such for instance as the "Sociedad de Fomento Fabril" of Santiago. On September 30, 1919, the Executive Board of that concern submitted a report to the Minister of the Interior in which it was stated that, after a careful examination of the situation, they had reached the conclusion that the service "no corresponde a las actuales necesidades del comercio, de la industria, y del publico general," also that "el servicio es deficiente, caro y muy malo." In other words, they alleged that the service was not adequate to the demands of commerce and industry, and of the public in general, and was moreover inefficient, expensive and poor. Finally, they attacked the company on the basis of non-compliance with the Ibañez Law of March 15, 1916, and suggested to the Government the nationalization of the telephone service. In a communication addressed to the editor of "El Mercurio" of October 5, 1919, the Executive Board of the Chili Telephone Company refuted the above complaints, and at the annual meeting of the company on July 28, 1921, Mr. Antonio Huneeus, Chairman of the Board, stated the situation as follows:

"Since the company was established in Chile over 40 years ago, the authorities and the public have given it their confidence. The Company, in its turn, has associated itself very closely with the national life, extending its system throughout almost the whole of our territory, and supplying its service efficiently and fairly at all times and with every sacrifice in its power on extraordinary occasions, such as epidemics or other exceptional calamities."

Rates and Finances

Touching the question of high rates charged by the company, it should be remembered that the rates

were based on the sterling value of the Chilean paper peso, and that an intelligent opinion of their fairness can only be formed by those who are familiar with the past and present monetary situation of the Republic.

During the last years of Balmaceda's presidency, the country had been flooded with paper money which constantly depreciated in value. It is true that the Chilean Congress of September 26, 1892, passed a law to stop the further issuance of forced currency, but the result was unsatisfactory. A few years later, by the Conversion Act of 1895, Chile established the gold standard and set the par value of the peso at 18d. However, the market value of the peso constantly fluctuated, and in 1914 fell to 9⅝d. This year is mentioned because on July 1, 1914, the Chili Telephone Company introduced a revised rate schedule, stating that the new rates were based upon a sterling value of 10d. to the peso, also that for each drop of 1d. below this standard the rates would automatically be increased by 10%.

It is evident that any fall in exchange immediately affected the revenue of the company, which had to bear the loss due to conversion of the Chilean peso into English currency, because all supplies for Chile, such as telephone apparatus and accessory material, were bought in England and paid for on a gold basis. From the standpoint of business men, the stockholders of the Chili Telephone Company would have been justified in increasing the rates according to the fall in exchange; but the directors of the company early recognized that such a procedure would be unwise, as it would cause a considerable amount of irritation to the subscribers, many of whom were unacquainted with the movements of exchange. In Chile the people in general looked upon a peso as a peso. Consequently, whenever the rates were increased the public would say that the company had raised the price for the service, whether such action was due to the fall of ex-

change or not. A concise statement of the situation appears in the report of President Parish, made at the annual meeting of the stockholders of the company on July 28, 1921, from which the following paragraph is quoted:

"The exchange situation is a most difficult problem at the present time and is causing us considerable anxiety as, since the close of the year under review, exchange has fallen below 7d., while a year ago it was 12d. The loss of conversion of our currency receipts into sterling is very serious for we must maintain here the supplies of material required for the upkeep of the service. In order to enable us to counteract this loss to some extent we are arranging to charge a premium on our tariffs from October 1st next until such time as exchange improves to 10d., a figure which the Government has agreed we are justified in taking as a minimum basis for the dollar." (Chilean peso.)

This increase in rates constituted one of the main causes of complaint against the company.

Another statement bearing upon the rate question is that of señor don Luis E. Cifuentes, Director General of Telegraphs, a gentleman whose high technical qualifications are well known in South America, and whose opinion cannot possibly be claimed to be biased in favor of the company. Reporting to the Minister of the Interior on the rates charged by the Chili Telephone Company, he writes, under date of May 6, 1916, that he has carefully studied the entire matter and has compared the tariffs of the company with the rates for similar service in Argentine, and finds that in the latter country the telephone rates are higher than in Chile. To illustrate this fact he writes:

"treinta pesos Argentinos por abonos trimestrales, lo que representa una suma de $120 el año, lo que en nuestra moneda corriente equivaldría más ó menos a $250, precio igual al que cobra The Chili Telephone Company por este servicio. En la República Argentina es *éste el servicio más barato.*"

(30 Argentine pesos are charged quarterly for a residence telephone, or 120 pesos annually, which in Chilean currency

is about the same rate as is charged by the Chili Telephone Company. In Argentine, however, *this is the lowest rate.*)

The 1899 issue of the "Sinopsis Estadística de Chile" gives for the first time the telephone statistics of the Chili Telephone Company as of March 31, 1900. These data are preceded by a brief sketch of the invention and progress of the telephone in North America and the introduction of the telephone in Chile. Speaking about the Chilean telephone service, the writer says:

"El precio ó arriendo que se cobra por el servicio telefónico, varía en los diferentes paises y ciudades segun las circunstancias locales; pero se puede asegurar que tomadas en consideración las ventajas y los gravámenes, no hai pais alguno en que el servicio telefónico sea tan barato y tan accesible a todo el mundo como en Chile."

(The price, or rental, paid for telephone service, varies in different countries and cities according to local conditions; but it can be affirmed that, taking into consideration the advantages and cost of such service, there is not another country in the world in which the telephone service is so low-priced and so easily obtainable by any one as in Chile.)

The reasons for the non-compliance of the company with the Ibañez Law have already been explained. In this connection it seems appropriate to refer to the unsolicited commendation of the company by the Director General of Telegraphs, as expressed in an official communication of May 6, 1919, addressed to the Minister of the Interior. Speaking of the underground installations in Valparaiso and Santiago, he writes:

"In connection with this subject it is my duty to mention that the company has asked for authority to install underground cables in some cities, without being legally obliged to do so, which is manifestly done in a spirit of progress."

Proposed Legislation

The commission appointed by the Government met for the first time in Santiago on September 17, 1920,

at the office of the Director General of Telegraphs, Senator don José Pedro Alessandri presiding. An article published in "El Diario Ilustrado" of October 9, 1920, informed the public that the commission had already finished one phase of the subject under consideration and had drawn up a report which would be submitted to the Minister of the Interior. The commission decided that, taking all factors into consideration, it was not expedient to purchase the plant of the company and that a renewal of the concession should be granted. As the expiration of the existing concessions of the Chili Telephone Company was approaching, they also recommended, at the request of the company, that a short extension of the franchise should be given to allow the commission further time to study the terms of the new concession. The Government accepted this recommendation and thereupon granted the company an extension of its franchise for two years. On December 13, 1920, the Government issued the following decree:

> "The Chili Telephone Company is hereby granted a two-year provisional extension of its concession, commencing March 8, 1921, to maintain its exchanges in the territory of the Republic on the same terms established by the concession which it now enjoys.
>
> "Within a year and a half the Company shall complete the underground work in that section of the city of Santiago mentioned in decree No. 3333, and shall also finish within the period of the extension of the present concession all other underground work already ordered by former decrees."

Under the law of 1904, the Government could grant the Chili Telephone Company, on the expiration of this decree in May, 1923, an extension of its former franchise only for 10 years for aerial lines and 20 years for underground plant.

Further deliberations by the commission finally resulted in the drafting of a new law applying to the production and distribution of electrical energy in all its various phases. This bill, by Deputy Victor R. Celis

M., was brought before Congress on August 12, 1922. The preamble states that to avoid vexatious delays during the discussion of the bill in the National Congress relative to the right of expropriation of property by private electrical concerns and damage from high tension currents, the author had thought it advisable to divide all future concessions into short and long term franchises. The following paragraph is a quotation from the preamble, referring directly to the telephone industry:

"Considering the fact that there exist very important telephone companies that expect to operate in the Republic, I am convinced of the need of a broader law which will grant long term concessions free from the narrow restrictions of Law No. 1665 of August 4, 1904. It is therefore our important duty to enact a law which contains adequate provisions to ensure the rapid establishment of these companies, whose services are urgently demanded."

Chapter I of the proposed law is devoted to the rules that henceforth shall govern the granting of concessions for the establishment and operation of telephone lines, and provides two kinds of franchises, a provisional one whose life is limited to two years, and another called "concession definitiva," a final franchise. It is left to the President of the Republic to grant the latter, either for 40 or 80 years, in accordance with the importance of the enterprise.

The reason alleged for the issuance of a short term concession is to enable the petitioner during the two years to make an exhaustive study of the entire project and to furnish the authorities with a complete plan of the proposed installation.

Article 5 provides that all telephone companies in operation at the time of the passage of the new law shall conform to the provisions of Chapter IV, which sets forth the duties of private electrical companies, both to the State and to private individuals. Paragraph 37 of the same chapter prescribes that all concessionaires must submit, for the approval of the Pres-

ident of the Republic, both the maximum rates which they propose to charge the public and the various classes of service which they intend to offer. These maximum rates may later be increased with the approval of the President, who is likewise authorized to prescribe the zone or zones within any city where aerial telephone lines are permissible and where underground construction must be provided.

Upon the passage of this law the concessionaire was to pay the following taxes: (1) a fiscal tax of 100 pesos on presentation of his request for a concession; (2) a municipal tax of 10 pesos for each kilometer of trunk line constructed between the localities shown on the plan accompanying his petition; (3) an annual municipal tax of 2 pesos for every telephone subscriber connected to a central situated in said municipality.

However, the above mentioned bill, presented to Congress on August 12, 1922, by Deputy Victor R. Celis M., was never passed; and as the aerial concessions of the Chili Telephone Company expired in March, 1923, a new Parliamentary Commission was appointed early in that year to study the telephone question and draft a telephone law to be presented to Congress. This Commission consisted of four senators and five deputies who, by Government Decree 1283 issued June 5, 1923, designated a sub-committee to draft the proposed telephone law. The sub-committee consisted of Senators Pedro Correa Ovalles (chairman) and Pedro Aguirre Cerda, and Deputies Hector Claro Salas, Tomas Ramerez Frias, and Alfonso Diaz Lira (secretary). After a number of meetings during the period June to September, 1923, the secretary presented a "Project of Law for Telephone Services" to the sub-committee.

The proposed new law, consisting of 35 articles, is an attempt by the legislators to prescribe ways and means of developing and modernizing the telephone

service of Chile. First of all it establishes two distinct classes of service, "private" and "public." The former class of service is for the exclusive use of private interests, and all franchises issued for this service shall be regulated and controlled by the provisions of Law No. 1665 of August 4, 1904. On the other hand, all concessions granted for the exploitation of a public telephone service shall be issued by the President of the Republic in accordance with the proposed new law. Article 6 of Clause II provides that "it shall be possible to issue concessions for a maximum period of 50 years starting from the date of the decree accepting the bids."

An examination of the stipulations contained in the proposed telephone law warrants the statement that some of the stipulations are so exacting as to defeat the very object for which the law was written, viz., the development and modernization of the telephone service throughout the republic. For example, Article 16 provides:

"At the expiration of the term of the concession the telephonic installations and the fixed and movable property of the society or company shall pass into the hands of the State, with no further expense than the value of the additional work carried out with the approval of the Government, reduced 2.5% for every complete year or fraction above six months which may have transpired since the date of accepting the additional work."

Moreover, the clause granting the Department of Inspection of Electrical Services an almost unlimited authority in regard to the operation of the telephone service furnished by the concessionaire, would doubtless act as a decided drawback to the successful operation and management of a modern up-to-date service.

So far as the writer has been able to ascertain, the proposed new law was not accepted by the Committee, and at the present moment of writing no telephone law has been presented to Congress. Taking into consideration the political party strife reflected in the lead-

ing journals of the republic, it would seem reasonable to assume that nothing will be done in this matter until after the 1924 elections.

However, in view of the ardent patriotism and the brilliant statesmanship of the men who have guided the destiny of the Republic of Chile, it is certain that the telephone service will ultimately be made one of the most important means of furthering the social and commercial life of that republic.

CHILI TELEPHONE COMPANY, LIMITED
Growth in Number of Subscribers and Wire Mileage

March 31	Number of Subscribers	Miles of Wire
1889	2,070	2,523
1890	2,868	3,320
1891	4,000	4,900
1892	*	*
1893	4,024	*
1894	3,987	6,169
1895	4.015	6,420
1896	4,252	6,722
1897	4.407	7,419
1898	4,463	7,846
1899	4,486	8,065
1900	4,613	8,299
1901	4,723	8,591
1902	4,981	8,754
1903	5,371	9,205
1904	5,814	9,884
1905	6,274	10,759
1906	7,270	12,759
1907	7,115	12,678
1908	7,666	13,496
1909	8,011	14,121
1910	8,818	15,121
1911	9,919	‡
1912	11,647	‡
1913	12,651	‡
1914	13,975	‡
1915	13,095	‡
1916	13,307	23,726
1917	14,243	24,493
1918	15,420	26,607
1919	16,751	27,869
1920	18,789	32,151
1921	19,867	32,807
1922	20,104	32,862

* Years during which a civil war took place in Chile.
‡ Transfer from overhead to underground was going on.

COMPAÑÍA NACIONAL DE TELÉFONOS
(Sociedad Anonima)

By decree of October 1, 1897, the Sociedad Nacional de Teléfonos received authority to furnish a public telephone service. The "Sinopsis Estadística de Chile" for the year 1899 states that the company had exchanges in the following localities:

Santiago	Villa Alemana	Población Portales
Valparaiso	Recreo	Limache
Viña del Mar	Concon	La Cruz
Lampa	Olmué	Quilpué
Colina	Quillota	Quinteros

The number of telephones in use was 1,200, the extension of single wire 9,252 kilometers and the share capital of the company 850,000 pesos. The toll plant consisted of

2	metallic	circuits	from	Santiago	to	Valparaiso
2	"	"	"	Valparaiso	to	Quillota
2	"	"	"	"	"	Limache
2	"	"	"	"	"	Quilpué
4	"	"	"	"	"	Viña del Mar
1	"	"	"	Santiago	"	Lampa & Colina
1	"	"	"	Viña del Mar	"	Quinteros & Concon

The 1900 issue of the "Sinopsis Estadística" mentions that at the annual meeting of the stockholders in November of that year, the share capital of the Sociedad Nacional de Teléfonos was increased to 1,000,000 pesos, the number of subscribers then being 1,250 and the estimated value of the telephone plant 910,000 pesos. The 1901 issue of this publication credits the company with 16 exchanges and 9,850 kilometers of wire. These data remain unchanged in the 1902 and 1903 issues, and thereafter no mention is made of the company.

We possess little definite information about the progress of the Sociedad Nacional de Teléfonos, except that it was unable to obtain the necessary capital

to place its wires underground, and consequently, in accordance with the law of 1904, its concession for aerial plant should not have been renewed. However, it succeeded in obtaining a renewal by decree No. 3210 of December 17, 1912. The petition was made to the Government by Lautaro Benham. A reorganization of the Sociedad Nacional de Teléfonos took place with the renewal of its concession, the reorganized company taking the name of the Compañía Nacional de Teléfonos, Sociedad Anonima. In the certificate of incorporation of the new company the share capital is stated to be 800,000 pesos, divided into 1600 shares of 500 pesos each, and the directors are authorized to increase this capital as the needs of the business require. Of the 800,000 pesos, 500,000 were paid by the organizers of the new enterprise for the purchase of the plant of the Empresa Chilena de Teléfonos, the property of señor don Mauro Lacalle.

A perusal of the certificate of incorporation and by-laws of the Compañía Nacional de Teléfonos makes it apparent that the company was handicapped from the start. By article 12 every shareholder was allowed a discount of 25% of the rate for telephone service for each share of stock owned, so that if he held four shares of stock he was entitled to gratuitous service, his only expense being the installation of the apparatus.

The following data concerning the Compañía Nacional de Teléfonos are taken from the "Anuario Estadístico de la República de Chile":

Year	Kilometers of wire	Number of Offices	Number of Telephones	Number of Subscribers	Gross Revenue (pesos)	Value of Plant (pesos)
1913	5,000	21	1,900	1,800	200,000	735,000
1914	3,800	20	1,780	1,700	198,000	735,000
1915	3,800	21	1,730	1,685	200,000	750,000
1916	3,800	21	1,600	1,550	181,000	850,000
1917	3,800	21	1,675	1,600	196,000	850,000
1918	3,400	16	1,690	1,615	196,000	850,000
1919	3,400	17	1,600	1,500	250,000	850,000
1920	3,400	17	1,600	1,500	250,000	850,000

In the second annual report of the Compañía Nacional de Teléfonos, issued on August 31, 1914, señor don Manuel Pardo Correa being the president and señor don Federico Jullian the general manager, there is a list of the places in which the company furnished service, i. e., 16 localities in addition to the exchanges in Santiago and Valparaiso. The balance sheet for 1914 does not make a favorable showing, the result of the year's work being a deficit of 13,456 pesos. Among the assets, which amounted to 974,165 pesos, the following items are mentioned:

Value of Installations........................	306,516 pesos
Real Estate	37,895 "
Line Plant taken over......................	181,541 "
Newly constructed plant....................	246,798 "

By decree No. 694 of February 27, 1917, the Compañía Nacional de Teléfonos was granted an extension of the concession originally granted to the Empresa Chilena de Teléfonos by decree No. 2895 of June 26, 1908, by which the period for overhead plant was extended to 10 years and for underground plant to 20 years, dating from June 27, 1918.

A peculiar situation arose in the winter of 1920 when, due to a severe snowstorm, nearly the entire plant of the Compañía Nacional de Teléfonos in Santiago was destroyed. In answer to the request of the company for permission to replace the fallen poles, the public authorities refused to grant such permission, alleging that while it was true that the company was then doing business under the decree dated June 27, 1918, this decree was illegal since by the law of 1904 the company should have placed their aerial wires underground. Unable to raise the capital required for such an undertaking, the Directors called a meeting of the shareholders, which took place in Valparaiso on February 3, 1921, at which the following resolution was unanimously adopted:

"The extraordinary meeting agreed to authorize the Directors to join with another company which possessed considerable capital or to sell the business for a sum of not less than 300,000 pesos."

In conformity with this resolution the meeting named three of its members to carry out negotiations and form a syndicate. The latter endeavored to raise new capital both in Chile and in the United States.

GENERAL TELEPHONE DEVELOPMENT

In addition to the Chili Telephone Company, Ltd., and the Compañía Nacional de Teléfonos (Sociedad Anonima), there are seven other enterprises that furnish a public telephone service in Chile, besides one telegraph company that operates a telephone line between the cities of Tacna and Arica, and two railroads that supply a limited public telephone service.

The Compañía Nacional de Teléfonos started in 1893 with 50 subscribers; on January 1, 1922, the number had increased to 880. Besides the main telephone exchange in the City of Valdivia, the company has offices in 22 other localities. The authorized capital is 250,000 pesos, of which 239,600 pesos has been issued. The last annual report of the company states that in order to provide for extensions to the plant it will be necessary to increase the capital to 500,000 or 750,000 pesos. The financial statement for June 30, 1922, shows a net revenue for the report year of 74,486 pesos, out of which a dividend of 12% was paid to the shareholders.

According to the most recent information the Republic of Chile stands third among the countries of South America in telephone development, having 0.7 telephones per 100 population. Colombia and Peru, each with a population half as large again as Chile, show a telephone development of only 0.1 per 100 inhabitants.

TELEPHONE COMPANIES IN CHILE, YEAR 1920*, WITH COMPARATIVE DATA FOR PRIOR YEARS.

Name of Company	Location of Central Office	Kilometers of Wire	Number of Subscribers	Gross Revenue (Pesos)	Expenses (Pesos)	Value of Plant (Pesos)
Compañía de Telégrafos a Bolivia (Telephone Section)	Tacna	2,900	270	40,500	29,000	100,000
Empresa del Ferrocarril de Antofagasta a Bolivia	Antofagasta	1,018	196	400	28,000	30,000
Empresa de Teléfonos de Taltal	Taltal	250	109	45,000	30,000	81,000
Ferrocarril de Copiapó	Copiapó	67	95	15,100	10,300	4,000
Empresa Ivan Franulic	Vallenar	234	95	20,000	18,000	110,000
Empresa Chilena de Teléfonos	Ovalle	500	65	8,000	10,800	60,000
Compañía Nacional de Teléfonos	Valparaiso	3,400	1,500	250,000	216,000	850,000
The Chili Telephone Company, Ltd#	Santiago	141,820	19,867	5,558,000	3,375,000	10,886,000
Compañía de Teléfonos de Bio-Bio	Los Angeles	420	480	91,000	62,000	293,000
Compañía Nacional de Teléfonos	Valdivia	1,600	800	133,000	87,000	450,000
Sociedad Progreso de Llanquihue	Puerto Montt	847	280	12,000	30,000	135,000
Compañía Telefónica de Magallanes	Punta Arenas	800	738	296,000	212,900	711,000
Total—Year 1920		153,856	24,495	6,469,000	4,109,000	13,710,000
Total—Year 1919		114,222	23,720	5,515,000	4,388,000	15,308,000
Total—Year 1918		71,549	21,701	4,951,000	3,910,000	12,736,000
Total—Year 1917		63,912	20,421	4,642,000	3,330,000	11,871,000
Total—Year 1916		59,876	18,968	4,200,000	3,120,000	13,185,000
Total—Year 1915		57,304	17,808	4,113,000	2,654,000	13,964,000
Total—Year 1914		55,589	17,497	3,805,000	3,032,000	11,752,000
Total—Year 1913		58,534	18,208	3,747,000	2,754,000	11,867,000
Total—Year 1912		38,420	14,855	2,674,000	1,845,000	9,378,000
Total—Year 1911		37,192	13,000	2,329,000	....	8,749,000

* Taken from "Anuario Estadistico de la Republica de Chile," Vol. III., Year 1920. (Issued in 1922).

In 1919 the Chili Telephone Company acquired the "Compañía de Teléfonos de Calama" and the "Empresa de Teléfonos" Antofagasta.

STATE TELEPHONE SERVICE

Unlike the majority of the South American States, the Government of Chile has never attempted to furnish a public telephone service, although the national constitution gives it a monopoly of both the telegraph and the telephone. The only exception to this policy was the seizure of a part of the plant of the Chili Telephone Company after the outbreak of the civil war during the administration of President Balmaceda, when the company's exchanges and toll lines in the districts which remained loyal to the President were taken over for military purposes. In the districts occupied by the Congressists the company was permitted to resume its business. The third annual report of the directors of the Chili Telephone Company, for the year ended March 31, 1892, mentions that the State monopolized the system of the company and suspended its use by the public for a period of eight months.

From 1891 until the present the Chilean Government has left the telephone service in the hands of private enterprises operating under franchises. These, as a rule, were granted for a term of 10 years, until by the law of August 4, 1904, this term was extended to 20 years for exchanges using underground construction.

Apparently a radical change from the former policy of the Administration took place about the time of the expiration of the concessions held by the Chili Telephone Company, when the Government, acting through the Director of Telegraphs, entered into negotiations with the company for the purchase of their entire telephone system. The opinion of the Director of Telegraphs is clearly expressed in his report submitted to the Ministry of the Interior on May 6, 1919:

"The General Telegraph Administration has always held the opinion that this service should be the monopoly of the State, as it is in nearly all countries of the world. The Ad-

ministration has voiced this opinion in various reports to the Ministry in regard to the telephone service, and has clearly shown the inconveniences inherent in a telephone service furnished by private companies, both from a political, economic and administrative point of view; likewise the advantages which the public would derive from a unification of these services under Government management.

"At various times the Telegraph Administration has discussed this matter with the representatives of the Chili Telephone Company, and begs to inform the Ministry that the company does not oppose the idea of the nationalization of the telephone service."

For political and economic reasons the Government decided to refer the question of the nationalization of the telephone service to a commission, and by decree No. 3626 of September 15, 1920, the following six prominent Chileans were appointed members of the commission: señor don José Pedro Alessandri, Pedro Aguirre Cerda, Carlos Balmaceda, Alejandro Valdés Riesco, Victor Vidaurre Leal, and Luis E. Cifuentes. For two years the commission deliberated upon the advisability of acquiring the property of the Chili Telephone Company, and thus combining the telephone with the telegraph service. After an exhaustive inquiry into all the details the Government abandoned the idea and decided to await the outcome of a bill introduced into Congress, dealing with electrical services in general, which would extend the period of concessions to 30 or 40 years.

APPENDIX

The Telegraph Tariff of December, 1923
Translation

The rates established by the tariff of December, 1923, supersede all those enacted by former legislation on this subject.

EXPLANATORY NOTES:

1. The rates contained in this tariff apply both to telegrams and to wireless messages sent from State telegraph offices.
   Some of the rates are given in paper pesos, others in gold francs. For domestic service the rates are stated in paper pesos or gold francs, according to the routes over which the message may be sent. The rates for telegrams to foreign countries are quoted in francs.
2. Ordinary Telegrams are private messages written in plain language or code, without the addition of any special instructions. In the domestic service between State telegraph offices, the message passing over the State telegraph lines exclusively, the basic rate, i. e. the rate for ordinary telegrams in plain Spanish, is doubled for all messages in foreign languages and for code or cipher messages.
3. Special Telegrams are messages to which special instructions are attached:
   a) Urgent Messages. The rate to be paid is three times that of an ordinary message.
   b) Prepaid Reply. In addition to the charge for the outgoing message the sender also pays for the answer. Both in the domestic service, and service with Argentine, Bolivia, Paraguay and Uruguay over the National telegraph lines, the rate for the reply is governed by Article 167 of the Regulations issued in 1913, which provides that if no answer has been made within a week from the receipt of the outgoing message the receiving office must so inform the sender of the telegram. For all other telegrams the waiting time for a reply is extended to 42 days, and if no answer has been made by the end of that

time the receiving office must refund to the sender the amount prepaid for the answer.

c) Collect Messages. Besides the charge for the outgoing message an additional amount shall be paid, equal to that of an ordinary message of the same number of words and sent over the same distance. For messages where the rate is based on the number of words the additional charge for collection is equal to one-fourth of the rate charged for an ordinary message of the same length.

d) Acknowledgment of Receipt requested, stating date and hour when the message was delivered to the addressee. For this service the extra charge is equal to an ordinary message of ten words.
If the request is made urgent, the sender must pay three times the extra charge last mentioned. If acknowledgment of receipt by mail is requested, the extra charge in the domestic service is 0.20 pesos and in the foreign service Fr. 0.25.
For messages where the rate is based on the number of words without a minimum charge, the extra charge is equal to a five-word message, either ordinary, urgent, etc.

e) Multiple address telegrams. For each copy containing 100 words or fraction thereof, an extra charge of 0.50 pesos. For urgent messages the charge is increased to 1.00 peso. In the foreign service the extra charges are Fr. 0.50 and Fr. 1.00 respectively.

f) Messages to be forwarded by mail. If a message is marked to be sent by registered mail, the extra charge is 0.20 pesos.

g) Telegraph money orders or telegrams of advice of payment between State telegraph offices. The charge is the ordinary or urgent rate equivalent to a ten word message.

4. Press Telegrams. A rebate of 50% is allowed for press messages.

5. Other Classes of Service.

a) Telegraphic or telephonic conversations over the

State telegraph lines. A charge of 25 pesos for the first ten minutes, and 12.50 pesos for each subsequent five minutes or fraction thereof.

b) Registered or abbreviated addresses. For each registration a charge of 2 pesos per month. For each registration of change of address the charge is 2 pesos.

c) Cancellation of a message. In the domestic service the charge for cancelling a message prior to its transmission is 0.40 pesos, which amount is deducted from the sum refunded the sender for the message. For an international message the fee is Fr. 0.25.

d) Repetition at request of sender. Extra charges are provided.

e) For a copy of a domestic message an extra charge of 0.50 pesos is made for each copy of a message containing 100 words or fraction thereof. For an international telegram the charge is Fr. 0.50.

6. Indication of Route of Message. No indication of route is admissible for telegrams sent to Argentine, Bolivia, Paraguay and Uruguay. Messages may be specified to be sent "via All America" to Arica, Iquique, Antofagasta, Valparaiso and Santiago. Messages may be sent "via West Coast" to Arica, Iquique, Antofagasta, Serena, Valparaiso, Santiago and Concepción.

7. Transit Telegrams to be Transmitted through Chilean Coastal Radiotelegraph Offices. The tariff states the rates applicable to this service. If the tariff does not provide a certain rate, the charge for an ordinary message sent to offices of other telegraph companies either in Chile or to foreign countries to be transmitted in transit by the coastal stations shall be increased by Fr. 0.60 for each word in lieu of a transit charge for each coastal station that intervenes in the transmission of the message.

8. Radio Messages sent to stations on board of ships. The rates are indicated in the tariff.

9. Method of Paying telegraph charges. All rates must be figured out and paid in accordance with Articles

53 and 57 of the Regulations contained in the Tariff and Instructions of 1913.

All charges stated in francs are collected in paper money. To ascertain the equivalent of the franc in paper currency the Administration issues each month a statement showing the value of the franc in paper pesos.

Both for domestic and foreign messages, whenever the amount to be paid for a telegram or wireless message contains a fractional part, the total charge must be increased to the next decimal; for example, instead of 0.81, 0.82, 0.83, or 0.84, the amount will be 0.85 pesos.

Tariff for Domestic Service

	Rate in paper pesos From 1 to 10 words	For each excess word
1. Between State Telegraph Offices:		
a) Between offices located in the northern zone; i. e. between the northern boundary of the Republic and the southern limit of the province of Coquimbo:		
In Spanish language	1.00	0.10
In a foreign language	2.00	0.20
In code	2.00	0.20
Press telegrams	(1)	0.03½
b) Between offices located in the southern zone; i. e. between the northern limit of the province of Aconcagua and the south of the Republic, excepting the Territory of Magallanes:		
In Spanish language	0.70	0.07
In a foreign language	1.40	0.14
In code	1.40	0.14
Press telegrams	(1)	0.03
2. Other Routes:		
a) Via Frutillar (Llanquihue): Between State telegraph offices in the northern or southern zone and those located in the Territory of Magallanes (telegraph district of Punta Arenas)	4.00	0.40
Press messages: 0.10 pesos per word with a minimum of 4.00 pesos per telegram, but no such message may exceed 120 words at the reduced rate.		
b) Via Radio: Between State telegraph offices located in the northern or southern zone, also between the two zones	4.00	0.40
(1) Minimum charge is from 0.70 to 1.00 peso, according to zone, no message to exceed 120 words at reduced rate.		

	Rate in gold francs From 1 to 10 words	For each excess word
c) Via Argentine: Between State telegraph offices in the northern or southern zone and those located in the Territory of Magallanes	2.00	0.15
Press messages: Fr. 0.05 per word; minimum charge per telegram Fr. 2.00.		
d) Via All America:		
To offices in the Territory of Magallanes	1.10	
To offices of "All America Cables"	0.47	
e) Via Ferrocarril Antofagasta: To offices of the Antofagasta-Bolivia Railway (Chilean Section)	0.20	

Power of Attorney by Alexander Graham Bell to José D. Husbands.

CHILI, SO. AM.

KNOW ALL MEN BY THESE PRESENTS, that I, Alexander Graham Bell, now residing in the City of Washington, District of Columbia, United States of America, do hereby constitute and appoint José D. Husbands of Valparaiso in the Republic of Chili, South America, my true and lawful attorney for me and in my name and stead to make application for Letters Patent for my inventions connected with Telephones and kindred contrivances in Chili and I hereby authorize and empower him to execute all papers connected therewith, sign drawings and transact such other business as may be necessary for the obtaining of such Patents.

IN WITNESS WHEREOF I have hereunto set my hand and seal this seventh day of May A. D. 1880.

(Signed)

Alexander Graham Bell

History of the Telephone and Telegraph *in* Colombia, S. A.

1865—1921

By
VICTOR M. BERTHOLD
of the
American Telephone and Telegraph Company

NEW YORK
Nineteen Twenty-one

INDEX

COLOMBIA

Area: 476,916 square miles
Population: 6,000,000 (estimate for 1920)
Capital: Bogotá. Population 150,000

FOREWORD

Although the telegraph started in the Republic of Colombia as early as 1865, its existence during the subsequent forty years was often very seriously threatened by political revolts and wars with neighboring republics, necessitating a constant struggle by the officials in charge of that service to assure its continuity.

The following paragraph, taken from the Memoria of the Secretary of State, Ricardo Becerra, dated Bogotá, January 31, 1884, substantiates the above statement:

"The close alliance in our country between the Administrative officials and the politicians has the inevitable consequence of involving the former in the violent disturbances and the insane follies of the latter. Indeed, the personnel of the telegraph are the first to enter the political arena, either willingly or by force, always resulting in the impairment of the service by such deplorable combination. Formerly, the result was mere neglect of service; to-day the service is corrupted—the political parties in their frenzy demand that everything should serve their special interests, and our laws, far from guaranteeing to the public servants some degree of independent action, make them on the contrary the mere playthings of the favorable or unfavorable result of political upheavals. . . . because, as a matter of

fact, the employee knows that his future depends solely upon the greater or lesser amount of political zeal he displays, and governs himself accordingly."

Every political uprising signified the more or less thorough destruction of the telegraph, the extent of the damage being dependent upon the length and the ferocity of the civil strife. Dr. Flavio Pinzon, Director General of Telegraphs, in his Annual Report for the year 1877, graphically describes the destructive work of the revolutionists:

"I have already mentioned," he writes, "in the introduction of my report that during the period September, 1876, to August, 1877, the telegraph was barely being kept alive because the revolutionists, reasoning well that the telegraph constituted the most powerful weapon of the Government to suppress them, had set out to completely destroy this service. Consequently, they smashed to pieces the apparatus and batteries, cut the wire and buried it either in the mountain fastnesses or in the rivers, broke all insulators and used the wooden posts for their camp fires."

Again during the revolution which started in 1895, more than 1,100 kilometers of telegraph lines were razed to the ground and the offices, apparatus and records were completely destroyed. On account of these frequent upheavals it is not an easy task to write a history of the Telegraph of Colombia and it is impossible to give complete annual statistics of the volume of traffic, extent of wire and the revenue. That the telegraph, despite all these vicissitudes, survived at all is due largely to the efforts of some

public-spirited officials who spared no pains to repair the wreckage and ruin resulting from the political turmoil.

TELEGRAPH SERVICE

The First Telegraph Lines

The first Colombian telegraph line was planned in New York City, November 1, 1864, and became a reality May 27, 1865, when the contract between F. Párraga, Consul General and Special Representative of Colombia, and the firm of Henry I. Davison, William Lee Stiles and William W. Woolsey, doing business in New York under the name of Davison, Stiles and Woolsey, was signed. This contract provided for the formation of an association to be known as "Compañía Anónima Colombiano de Telégrafo" with a capital of $50,000 divided into shares of $100 par value, of which the Colombian Government guaranteed to take 50%, the contracting firm 25%, with the remaining 25% reserved for Colombian capitalists and merchants. In turn, Davison, Stiles and Woolsey obligated themselves to construct a telegraph line, at a cost of $45,000, from Bogotá via Ambalema and Honda along the Magdalena River to Nare, a distance of about 150 English miles. The Government agreed to pay the contracting firm at the rate of $300 a mile should the actual line distance be greater. The contract expressly stipulated that the management of the new company was to be left

in the hands of Párraga, Davison and Dickenson, who were authorized to elect a Treasurer and Director, until the first meeting of the stockholders had been held. The annual meetings of the stockholders were to be held in the city of New York on May 1 of each year. The entire rights, title and property of the company were entrusted to the managers of the new company. It was further stipulated that at the end of each year any existing liquid assets of the company should be used to pay dividends to the shareholders, and in case such assets were insufficient to pay a 7% return on the outstanding capital, the Government of Colombia was to make up the difference. The company was to continue for 30 years from the date of the contract.

To assist the work of the contractors the Colombian Government, through the Secretary of State, addressed a circular to the leading business interests of Bogotá, on June 22, 1865, asking them to become shareholders in the new enterprise. This appeal met with very little response, however, and subscriptions for only 63 shares were obtained.

Similar circulars were sent to the Governors of the various States, advising them that the Government proposed to immediately extend the telegraph from Nare to Medellín; and an additional contract providing for this work was signed on January 9, 1866. Meanwhile, Stiles had proceeded with the construction of the line from Bogotá to Nare, and

on November 15, 1865, sent the first telegraph message from Cuatro Esquinas to President Manuel Murillo:

"The electric telegraph has come up to the Colombian Andes and sends its first greetings to the President who has shown such a deep interest in the introduction of the telegraph in Colombia. May peace with its blessed wings reign throughout this beautiful country and furnish us with the means to extend in less than two years the telegraph from the heights of Funza to the Atlantic shores.

WILLIAM LEE STILES, *Manager*."

Unfortunately, it was the destiny of the new telegraph to exist for many years in a country torn by political strife.

In addition to the original contract of May 27, 1865, which provided for the construction of the line from Bogotá to Nare, the Government subsequently signed three other contracts, as follows:

January 9, 1865, providing for the extension of the line from Nare to Medellín.

August 30, 1866, providing for the construction of a line between Honda and Manizales.

October 31, 1866, modifying the last contract and providing for the construction of the following three lines at a price of 300 pesos per mile:

Ambalema to Ibagué	37.45	miles
Ibagué to Cartago	68.56	"
Cartago to Manizales	43.79	"

Under the original contract the Company had undertaken to bring the telegraph from Bogotá to Nare, but a Governmental Resolution of May, 1866,

directed Stiles, who had charge of the construction, to stop work at Honda. Thus the Bogotá-Honda line remained for some time the only telegraph owned and paid for by the National Government. Due to the solicitation of President Murillo, the Governors of the various states, among them being Antioquia, Tolima and Cauca, had also contracted with Stiles for lines connecting with Bogotá and Honda, and by July, 1868, a number of additional lines had come into existence.

Presidential Decree of August 20, 1869

The next important event in the development of the telegraph in Colombia was the Presidential Decree of August 20, 1869, part of which is quoted herewith:

"*Whereas,* The telegraph line has been constructed from this city (Bogotá) to Ambalema in accordance with the contract signed at New York, May 27, 1865, between this Government and the firm of Davison, Stiles and Woolsey; and

"*Whereas,* During the past four years this Government has failed to receive any official notification of the annual meeting of the stockholders as prescribed in the contract of May 27, 1865; and

"*Whereas,* The said company has not elected the officials mentioned in that contract, but on the contrary that company to-day has ceased to exist, leaving the entire business to the care of the Colombian Government as the principal stockholder; and

"*Whereas,* It is now incumbent upon this Government to assume the administration of the company,

"RESOLVED, 1. That from to-day the Government of Colombia assumes the exclusive management and direction of said Telegraph Company.

"2. That the telegraph service shall be annexed to the General Direction of the National Postal Service as its executive office and that hereafter the Postmaster-General shall have the entire management of the company and the regulation of the telegraph service. . . . . . .

"17. The Governors of the States of Cundinamarca, Tolima and Cauca shall exercise superintendency over the company in all matters pertaining to the maintenance of the lines and the service in all places within their respective territories through which the telegraph lines pass."

On February 4, 1870, President Santos Gutierrez advised the Legislature that the Government had signed two new contracts with William Lee Stiles. By the first one, the Government acquired the stock held by the firm of Davison, Stiles and Woolsey in the Colombian Telegraph Company; the second one referred to the construction of a line between Facacativa and Honda. The message of the President set forth that the acquisition of this stock was very advantageous to the Government because the shares were bought at a discount of 25% and also because the Public Treasury was at once relieved of the pay-

ment of the 7% return on the shares taken over. The new line to Honda was to form a link with the existing line between Manizales and Cartago, from which place another line was to be built to the harbor of Buenaventura to connect there with the submarine cable.

Condition of Lines and Service 1865-1882

The Memoria of the Secretary of Finance and Public Works, Sr. Jorge Gutierrez de Lara, as presented to the 1868 Congress, gives some interesting information concerning the commercial value of the lines which had already been built. After mentioning the contract of May 27, 1865, the Secretary referred to the contract of January 9, 1865 (for the extension of the line from Nare to Medellín) and then to the contract of August 3, 1866 (a line between Honda and Manizales) and the contract of October 31, 1866 (change of route of last-mentioned line), and stated:

"So far the Government has paid out $50,000 for the telegraph, yet to-day it may be said that there is no telegraph, because the service over the line between Bogotá and Ibagué is too frequently interrupted, while the line between Medellín and Manizales can only be used for communication within the State of Antioquia. It is difficult to understand why the line between Bogotá and Honda was built via Ambalema through a territory where

climatic conditions make the destruction of the line a certainty. Nevertheless, the line was built and only a few days after its completion communication over it stopped, and to-day the posts and wires are down so that there is no hope of its being rebuilt. The wires are used to make fences, the poles for stakes, while the insulators serve as tumblers out of which they drink liquor in the roadside inns."

In fact, the promiscuous destruction of the telegraph lines by the people dwelling in these regions finally became so general that the Government petitioned the Clergy and the Governors of the States to aid in the protection of the lines.

That the telegraph situation had not improved by 1870 is indicated by the report of Sr. Januario Salgar to the Congress, part of which is quoted below:

"The establishment of the telegraph has cost the Government a considerable investment, yet the actual service rendered is almost zero, because there is absolutely no certainty that at any given moment a message can be transmitted. If the telegraph is to aid the industrial life of the country the present rates should be reduced . . . and it is of the utmost importance to extend the lines." On March 1, 1870, Congress passed a law which authorized the President to issue to any foreign cable company a landing permit to connect the country with other parts of the world.

"In 1871 the condition of the telegraph, as described by Dr. Salvador Camacho Roldan, Secretary of Finance and Public Works, in his report to Congress, was indeed a dismal one.

"We have dearly paid for our inexperience in telegraphy. The lines so far constructed in our country are very bad. The conductors have been attached to poles of unsuitable material; the poles themselves have not been set properly; our lines pass through virgin forest exposed to all kinds of destruction, the insulators are of bad quality; in one word everything tends not to the maintenance of the lines, but to their speedy destruction.

"After building 455 km. from Honda to Bogotá and from Ambalema to Manizales at an expense of 79,825 pesos, equivalent to 171 pesos per kilometer, not a single message has reached Bogotá from Manizales during the four years since the installation of the lines, and it is only a short time ago that a few telegrams were received from Cartago. The line Ambalema to Honda (75 km.) has been abandoned and destroyed and not long afterward the line from Cartago to Manizales as well."

Despite all these drawbacks, the Secretary strongly recommended to Congress the appropriation of greater sums for the reconstruction and extension of the telegraph. The first record of statistical data concerning the Colombian telegraph appears

in this report and shows that the following lines were in service during 1871:

Location of Line	Length of Line
Bogotá to Medellín	560 km.
Facacativa to Honda	80 "
Cartago to Honda	300 "
Facacativa to Mesa	35 "
	975 km.

In the report for the following year (Memoria, 1872) the same writer, after again emphasizing the baleful result of the inexperience of the Government with the telegraph, summed up the situation as follows: "Thus the lines once constructed became quickly useless, for example the line Bogotá-Ambalema remained operative but 6 months of a year; the line Ambalema-Honda was entirely destroyed 6 months after its completion; the line Ambalema-Ibagué did not work 50 days in a year; the line Ibagué to Cartago has transmitted only a single message within about 2 years; while the line Cartago-Manizales scarcely remained workable for 30 days in a year and a half. Briefly, within the past five years from October, 1865 to 1870, the telegraph offices have transmitted perhaps 5,000 messages. Despite our efforts to improve these conditions only 5,640 messages have passed over our lines during the period 1870–71, producing a revenue of 1,926 pesos."

Telegrams Transmitted 1870-71

Office	Number of Telegrams
Bogotá	2,019
Facacativa	1,117
Ambalema	1,272
Ibagué	380
Cartago	271
Manizales	250
Honda	127
Villeta	73
Guaduas	131
Total	5,640

After the insurrections of 1868–70 under President Santos Gutierrez, Colombia enjoyed a period of peaceful development which lasted until 1877, when a new revolution broke out. The damage incident to this latter revolution was quickly repaired, however, through the active work of the Administration. Naturally, the telegraph benefited by the absence of civil strife and by August, 1879, 14 years after the opening of the first line, the total length of line had increased to 2,960 km.

That this growth, however, did not accompany a corresponding increase in efficiency or serviceability is indicated by the following quotation from the Memoria of 1882. In this Memoria the Secretary of Public Works, Dr. Narcisco Gonzales Tineros, stated that "Until the middle of last year our telegraph service was in a deplorable condition owing to the bad material employed in line construction and

the lack of discipline among our employees." In the same year the National Government closed an important contract for connecting the city of Panama with various important commercial centers and also joined the Colombian telegraph with that of the Republic of Venezuela.

Development of the Telegraph 1882-1888

From the time of its introduction under President Murillo until 1882 the Colombian telegraph had been conducted without any definite system of organization, its status depending solely upon decrees and resolutions issued for some particular purpose. The Director General, in his report for 1881 to the Secretary of Public Works, said that, as regards organization, the service so far had been in a chaotic condition and that the wording of the decrees was frequently such that even the superior officials could not understand them. In an effort to improve this condition the Director General submitted to the Secretary a draft of a "Reglamento Economico" which was adopted September, 1881, and recommended that the National Congress should enact Rules and Regulations governing the service.

There are no official records concerning the telegraph from 1882 to August, 1883, but the Memoria of the Secretary of State, written in 1884, shows that the Administration was earnestly engaged in

the extension of the means of rapid communication during this period.

The result of this effort to increase the telegraph facilities is indicated by the following statistics:

Comparative Telegraph Statistics for 1881 and 1882

	1881	1882
Gross Revenue...........	56,103 pesos	63,487 pesos
Number of Telegrams over National Lines..........	212,777	253,408
Expenses (including new construction)...........	242,549 pesos	133,696 pesos
Number of Telegraph Offices	86	101
Extent of Telegraph Line...	3,448 km.	3,771 km.
Total Capital Invested since 1865..................	....	1,250,000 pesos

It is from this report that the quotation appearing in the foreword was selected, in which mention is made of the harmful effect of mixing politics with a public service. This is further emphasized by the following quotation which is taken from the last paragraph of that report: "Our legislators need not wonder why the work of this Administration has been so poor and unproductive of results. We have lived in a political anarchy, and have been surfeited likewise with social anarchy! Our nation has suffered much and the life of society has been threatened seriously. The main result of the situation just mentioned is a deadly relaxation of our legal fiber; and without maintenance of law, what nation has ever been able to survive." In this connection

the writer introduced the letter sent by Jay to Washington on June 27, 1784.

From 1884 to 1888 there is another break in the history of the Colombian telegraph resulting from the ever recurring political upheavals which took place during the absence of President Rafael Nunez in Europe. In 1885 the Liberals fomented an outbreak which brought ruthless civil war over the states of Boyacá, Cundinamarca, Magdalena and Panama and which ended with the surrender of the insurrectionists in August, 1885, and the declaration of peace on September 5. A year later Nunez enacted a new Constitution for Colombia, promulgated August 4, 1886, by which the former federal system of Government was abolished and the States became mere Departments and their Governors Presidential appointees. Thereafter, the National Congress consisted of a Senate and House of Representatives and the Presidential term was increased to 6 years. Nunez accepted the Presidency under the new constitution but in 1888, due to a protracted illness, designated Carlos Holguin to act for him. Nunez continued in office until 1895, when he died. This brief historical summary has been given in order to better understand the conditions which governed the development of the telegraph during this period.

During 1888 the attention of the Government was directed for the first time by General Rafael Reyes, Minister of Public Works, to the importance of the

establishment of long distance telephone lines in Colombia, but, as this subject will be treated quite exhaustively under the head of "State Telephony," a mere mention of the fact is sufficient.

Reports of the Director General of Mail and Telegraph for 1892 and 1896

The next available official document is the report of the Director General of Mail and Telegraph which was submitted to the Minister of Public Works in June, 1892, and which contains statistics for the years 1890 and 1891 as well as a brief sketch of the Colombian telegraph service up to June 2, 1892. Concerning the growth of the telegraph, this report states that "About a quarter of a century has passed and the patriotic wishes of Mr. Stiles are nearing fruition. The 20 km. of our first line have now grown to a network of about 10,000 km. reaching 273 places. The lines interconnect not only the last-mentioned places, but they also afford, by means of the Pacific cable, communication with the countries of the world."

The following figures are taken from this same document:

Telegraph Line in Colombia

Date	Length of Line	Number of Offices
November, 1865	20 km.	2
November, 1875	2,190 "	53
November, 1880	3,120 "	82
November, 1890	8,049 "	229
June, 1892	9,614 "	273

Early in 1896 the Minister in charge of the

Telegraph Service called for a report from the Director General of Mail and Telegraph. This report, which was signed by Sr. Enrique de Narvaez on June 1, 1896, is an extensive and instructive document covering the period from June, 1894, to June, 1896. The opening paragraph calls attention to the fact that despite the civil disturbances during 1895–96 and the customary destruction of the existing lines of communication, in this case amounting to about 1,100 km. of line, the service as a whole had been improved and the lines rebuilt through the heroic work of the employees.

The steady progress of the service is indicated by a number of statistical tables from which the following information is taken:

New Lines Constructed from June, 1892, to April, 1894

From	Chapinero	to	Chiquinquirá	130 km.
"	Riohacha	"	Valledupar	220 "
"	Banco	"	Tamalameque	35 "
"	Ciénaga	"	Calamar	190 "
"	Charalá	"	Sótacuirá	140 "
"	Cocuy	"	Güicán	15 "
"	Rionegro	"	Botijas	53 "
"	Suratá	"	La Baja	10 "
"	Tocaima	"	Agua de Dios	15 "
"	La Mesa	"	Colegio	13 "
"	Altamira	"	Guadalupe	10 "
"	Caldas	"	Santa Bárbara	29 "
"	Marinilla	"	Santuario	10 "
"	Santuario	"	Vahos	13 "
"	Rionegro	"	San Vicente	20 "
"	Fusagasugá	"	Arbeláez	10 "
"	Arbeláez	"	Pandi	25 "
"	Agualarga	"	Sasaima	20 "
	Total			958 km.

Adding to the above the 9,614 km. of lines existing in 1892, gives a total of 10,572 km. in 1894.

A considerable part of the report is devoted to the development of the telegraph in the Department of Panama which up to 1888 had received no aid from the Government. After the formation of the Dirección General de Correos y Telégrafos in accordance with Law No. 83, enacted in 1888, one of the first official acts of the Director General was to issue an order which provided for building telegraph lines in Panama. It was specified that the necessary material should be obtained directly from England and that iron instead of the unsuitable wooden poles should be used. The actual construction was left by the Government to the Department of Panama. By the close of the year 1894 the Department had a total of 675 km. of line distributed as follows:

Province of Panama	129 km.
" " Cocle	144 "
" " Veraguas	138 "
" " Chiriquí	156 "
" " Los Santos	108 "

The period July, 1896—July, 1898 is covered by the report which the Minister of Government, A. Roldan, presented to the Congress of 1898. This document likewise includes the report of the Director General of Telegraphs, made to the Minister. Speaking of the telegraph service, A. Roldan calls

the attention of the members of Congress to the recent plant development: "In the year 1890 the extension of the telegraph lines was 8,049 km., connecting 229 telegraph offices. By July, 1898, these lines had grown to 14,040 km. with 448 offices, a gain of about 6,000 km. of line and 219 offices."

He next considers the question of plant investment: "An examination of our contracts and accounts proves that up to 1890 the average cost of a league of telegraph line was $1,300. Since then the cost has decreased to $650. In other words, the 14,040 km. of line constructed from 1865 to 1898 has cost the Government:

8,049 km. at $1,300 per league	$2,093,000
6,000 " " 650 " "	680,000
Total telegraph line investment.....	$2,773,000

From the above sources we learn that the cost of a telegraph office, including apparatus, averaged $650 up to the year 1890, and only $200 from 1890 to 1898. Thus the total cost of our telegraph plant, excluding maintenance and renewal, has been $2,965,650. Including these two items, it is estimated that the expense would be three times the above-mentioned figure. Up to the present the telegraph service has not been a source of income to the Nation."

The report of the Telegraph Director contains some interesting statistical data, supplementing

those furnished in his report for 1892. From 1865 to July, 1898, the increases in telegraph line and offices have been:

	Line	Offices
1865 to 1875..............	2,170 km.	51
1875 " 1880..............	930 "	29
1880 " 1890..............	4,929 "	147
1890 " 1898..............	6,047 "	219

In October, 1896, the Government of Colombia, upon the request of the Governor of the Department of Panama, took over the 675 km. of telegraph line that had been built in Panama, paying therefor the amount of $55,854.

Political Events and Telegraph Service, 1898-1908

There are no official records of the Telegraph Administration after 1898, but the salient points of the development of the telegraph during the period 1898 to January 1, 1904, are described by the Director General of Posts and Telegraphs, Manuel J. Guzman, in a report signed at Bogotá in March, 1904.

As these years cover an important and perhaps the most important period of the history of Colombia and include the entrance of the United States upon the Isthmus of Panama with its far-reaching results for Central and South America, and as the Colombian telegraph was again directly affected during these years by serious internal political disturbances, a brief review of the main historical events will be

advantageous for a better understanding of the difficulties that beset the Colombian telegraph in this period of its history.

In 1898, Sr. A. Sanclemente, a strong Conservative, was elected President for the term ending in 1904. In October, 1899, the Liberal Party organized another revolution which, however, failed. The following year the Vice-President, José Marroquin, seized the Government and imprisoned Sanclemente, whereupon new disturbances broke out which ended with the defeat of the rebels at Cartagena, although the fighting continued about Panama. Finally, Marroquin and Castro were recognized as the acting heads of the executive branch of the Government. The rebellion, however, lasted through 1901 with severe fighting around Colon, which the rebels finally succeeded in capturing. During this same time Colombian Government forces had invaded Venezuela. It was not until June, 1903, that internal peace was restored. In the autumn of that year Colombia, exhausted and half ruined, suffered a severe loss in the secession of Panama due to the revolution of November 3, 1903, and the recognition of the Republic of Panama by the United States on November 7, 1903. In 1904 President Marroquin's term expired and General Rafael Reyes assumed the Presidency of Colombia, which he held until 1909.

The report of J. Guzman, dated Bogotá, March, 1904, part of which is quoted below, shows the effect

of this political turmoil upon the telegraph lines of Colombia.

"Unfortunately for our country the present report cannot present any encouraging statistical data which would prove progress of the telegraph service of Colombia. On the contrary, due to the last revolution, that service has suffered a heavy loss. Shortly after the last outbreak, by decree of the Executive, the mail service was stopped. Next the revolutionists pulled down the telegraph lines, burned the offices, apparatus and destroyed all records; consequently, without any official records, the Administration was unable to collect the outstanding accounts. It is indeed a singular fact among us that we employ not only brutal weapons to overcome our political adversaries, but that evidently we seem to revel in wanton destruction, with the mad desire to leave not a trace of the elements of civilization, going to that extent of savage folly to boast of the destruction of all that is most dear to us, most useful and indispensable.

"It is my painful duty to call the attention of my superior to the sorrowful condition of the telegraph lines when peace was restored. Here and there existed some portions of routes with or without conductors and now and then there remained some insulators. It practically meant a total loss of the efforts of many years due, not to the blind ravages of nature, but to the violent passions of men. Thanks

to the needs of the war, the Government, and in some cases even the revolutionists, had tried to preserve telegraph communication between some important centers, but all such lines, being of a mere temporary character, soon came down and were abandoned. Although in the Departments not affected by the civil strife the Governors and the loyal army tried to secure some kind of service, their efforts were largely frustrated because while there was already a scarcity of supplies for maintaining the lines at the outbreak of the war, this trouble became more acute from year to year, and in their endeavor to maintain in working condition at least the principal lines, the branch lines were stripped of their wires, insulators and apparatus. Nevertheless, at the end of the war and despite all efforts to improve the service it may truthfully be asserted that there remained but fragments of the old telegraph lines which could be used. Some cablegrams reached Bogotá, also some messages from Antioquía and Cauca, while from north of Colombia messages reached Bogotá but occasionally and after much delay."

Naturally the task of the Administration under the conditions described in the preceding paragraphs was a most difficult one, but by quickly closing contracts for the reconstruction of the lines the Government apparently succeeded, in a measure at least, in reestablishing the telegraph service of

the country. This is indicated by the report for 1908 of the Minister of the Department of the Interior which states that, though there existed but 14,752 km. of line at the beginning of 1907, 1,880 km. had been added during the year, bringing up the total length of line to 16,632 km. by the close of 1907. In addition thereto, 73 new telegraph offices had been opened, so that the total number at the date of the report was 524, with 1,424 employees. The first telegraph map of Colombia, which was prepared and published in Paris, was attached to this report. According to the data published, Colombia at that time possessed about 18,000 km. of telegraph line, of which 12,000 km. had been recently constructed.

Administration of Perez, Director General of Mail and Telegraph 1910-1913

An important event concerning the telegraph occurred in October, 1907, when Decree 1249, by which the Codigo Postal and Telegráfico was declared to be the law governing the telegraph service, was signed. The more modern period of the Colombian Telegraph commences with the work of Gregorio Perez, Director General from 1910 to 1913. This man, with a courage not often found in such appointees, tried to eliminate the chief reason for the very heavy annual deficits produced by the telegraph, which was the failure to provide proper

maintenance of the plant and the total lack of a real efficient organization, including reliable records.

Gregorio Perez was appointed Director General of Posts and Telegraphs on September 1, 1910. About a year later he wrote his famous report for the period 1908 to August, 1910, in which he disclosed the evils emanating from the policy of the Government of entrusting the maintenance of the lines and the buying of supplies and apparatus, by calling for public tenders, to private persons (party politicians), depriving thereby the General Administration of an effective supervision and management of the service.

It appears that Francisco J. Fernandez had been the successful bidder from 1903 to 1910, holding at the same time the office of "Administrador General" of telegraphs and telephones. As such he was empowered to collect the telegraph revenue, engage employees, pay their salaries, and maintain the interior organization of the service. In accordance with the contracts between the Government and the Administrator, the former agreed to pay the latter, in lieu of superintending the telegraph service, 5% of the telegraph gross revenue, 30% of the saving in expenses attributable to his management, and 30% of any increase in revenue, over the receipts of 1905. From 1906 to 1910 the National Treasury paid Fernandez 1,950,356 pesos for construction,

repair and maintenance of lines, with the result that in 1910 the Colombian Telegraph Service was as useless as any public service would be with a staff of unpaid and underpaid employees. Fortunately, Perez refused to entertain any further dealings with Fernandez, and rejected the new contracts submitted for his signature. As a result of his investigations, which showed that under the management of Fernandez the cost of maintenance had been preposterously high while the condition of the lines had been constantly growing worse, the President was induced to issue Decree No. 1130 of December 14, 1910, whereby the Administration assumed the sole management of the telegraph and telephone systems. A new office was created, called "Intendencia de Telégrafos," which was to perform the duties previously delegated to F. J. Fernandez. It was made the special duty of the Intendencia to watch over the maintenance of the plant and to provide supplies of line material and accessories which were to be ordered through and paid for by the Department.

To ensure absolute control of all expenditures, the Intendencia had to render detailed statements of its expenses to the accounting office of the Administration, which, after scrutinizing the bills, transmitted them to the National Treasury Department.

The following statistical data illustrate the progress achieved under Perez:

Statistics of the Colombian Telegraph
1907-1913

Year	Paid Telegrams	Revenue (Pesos)	Official Telegrams
1907	1,036,423	246,813	447,680
1908	1,189,752	272,986	532,843
1909	1,232,637	290,482	495,621
1910	1,304,106	308,799	500,000
1911	1,462,323	336,031	478,882
1912	1,694,660	380,958	557,699
1913	1,926,616	463,754	632,274

When the management of the telegraph passed from Fernandez to Perez on December 14, 1910, the extension of wire amounted to 17,355 km., a large portion of which was on the point of collapse. In the latter part of 1913, when Perez handed the Telegraph Administration over to his successor, the total length of wire was 19,098 km. with 579 telegraph offices.

The Colombian Telegraph Since 1913

During 1913 the Government published the second edition of the "Codigo Fiscal de Colombia," of which chapter 2 deals with the Postal and Telegraph Service, part of which is quoted below:

ARTICLE 137—

1. Throughout the National Territory the State furnishes the postal and telegraph service.

2. Postal service may be furnished also by the departments, municipalities, or private persons.

3. The telegraph service, on the contrary, is exclusively given by the State or by corporations with which the State has closed a contract for the establishment of such service, or which have obtained permission from the Government.

ARTICLE 138—

The dispositions mentioned under Article 137—3 apply also to the furnishing of telephonic or wireless communications and to all similar means of electrical transmission.

ARTICLE 139—

It is left to the municipalities to grant to private persons permits for the establishment of such services over the public roads.

During 1913 and 1914 Mario Cajiao occupied the office of Director General of Posts and Telegraphs. Except for the development of wireless telegraphy in Colombia, Cajiao seemed to have forgotten the existence of the telegraph according to the description of the service as given by his successor, R. Ramirez B., in his report to the Minister of the Interior, signed Bogotá, July, 1915.

This report states that in accordance with Law No. 76 the Dirección General de Correos y Telégrafos was abolished on November 16, 1914, as a result of the unceasing complaints of the public about the telegraph, and the management of the service was handed over to an Administrador General de Telégrafos under the supervision of the Minister of the Interior.

Referring to the condition of the service when the Dirección General was abolished, Ramirez wrote:

"The telegraph service was in a deplorable condition. As no messages could be sent over long lines, thousands of messages were sent by mail from Ocana, Socorro, Pamplona, etc., to the central office in Bogotá. Again messages from Atlantic harbors destined over such lines, were received by the addressee with a delay of 20 or more days. Both the press and the public with good reason demanded that such an anomalous situation should come to an end."

And again:

"It is a pity that during the 50 years the telegraph has been in existence we have not worked out a system which would ensure proper maintenance of the plant combined with economy. Some years or months the telegraph is maintained by contracts; for some others by the Administration. In turn the maintenance is handed over to contractors, and due to such changes nothing is gained. From one change to another the telegraph suffers fatal blows. We order from foreign countries many costly and useless materials, some of them never reach us. Furniture in the telegraph offices disappears, and in this state of permanent insecurity no definite plan is evolved. Despite that, our Treasury pays out amounts which, judged by their magnitude, would represent the price of a first-class telegraph service."

A considerable part of the report occupies itself with the rate question, which will be taken up under its proper head.

From 1915 to 1920 the Colombian Telegraph has shown a steady improvement. Barring new political disturbances, it is reasonable to predict that with a modern business-like management and an enlightened Administration, the efficiency of the service will soon be greatly improved.

Looking back over the past 55 years, and bearing in mind the tremendous odds against which the Colombian telegraph has had to contend, the wonder is that it survived all the onslaughts made upon it and possessed the recuperative strength to rise again and again like the Phœnix from its ashes.

CABLE SERVICE

The first mention of an offer to connect Colombia with the outside world by means of a submarine cable appears in the report of General Alejo Morales, who was the Minister of Finance and Public Works in 1867. He reported that the Consul General of Colombia, stationed in New York, had submitted to him two proposals: The first was a proposition made by La Barra & Co., to build a telegraph from one of the harbors of the Isthmus of Panama through Central America, cable to Jamaica and Cuba, and thence to the coast of Florida (U. S.); the second came from Warren C. Foster, a citizen of the United States, and provided for connecting Panama and Colon with some harbors of the Pacific and Atlantic Oceans, the cable to pass through the Antilles. Because the President of Colombia had no authority to accept any of these proposals the matter was referred to the Legislature, which passed Law No. 25 of July, 1867, authorizing the Executive to establish telegraph communication with foreign countries.

On August 25, 1879, Dr. Pablo Arosemana, Minister Plenipotentiary of Colombia in Peru, signed a contract at Lima with the firm of Fralick, Murphy & Co., of New York, which provided for laying a submarine cable, starting from Panama harbor, touching at Buenaventura, Colombia, and terminating at Callao, Peru. One of the principal stipulations agreed upon was that the Colombian Government should refuse to grant to any other company for 25 years the right to lay a submarine cable from Panama to the southern coast of Colombia. On the other hand the concession was to be void if the company failed to finish the laying of the cable within 18 months after the signing of the contract and also if during the 25-year period the company failed to give service for 9 consecutive months. Permission was given to the company to establish intermediate cable stations on the Colombian coast. The contract received the approval of the Secretary of the Exterior and Foreign Relations in October, 1879, and service over the cable opened on October 2, 1882, via Buenaventura.

The concession granted Fralick & Co. was transferred by them to E. D. Adams, and in turn by the latter to the Central and South American Telegraph Company. This company, through its representative, A. Ferro, petitioned the Colombian Government to acquiesce in and to recognize the transfer of all rights and privileges obtained origi-

nally by Fralick & Co., to the Central and South American Telegraph Company, which petition was granted in 1881 by Presidential Decree No. 876. Due to this transfer of the original concession, the Central and South American Telegraph Company possessed the exclusive right to transmit cable messages over the cable extending between Panama and Callao, via Buenaventura. The same company also received a concession for a cable connecting the east coast of the Isthmus of Panama with the rest of the world. But, while the company had a 25-year exclusive concession as regards service over the first cable, the Government of Colombia refused a similar guarantee for the second.

On June 6, 1870, Bendix Koppel, representing the West India and Panama Telegraph Company, Ltd. (an English corporation registered at London, July 30, 1869) petitioned the President of Colombia for the right to land a submarine cable upon the coast of the Republic to be connected with the then existing land lines. On June 17, the Minister of Finance and Public Works issued the permit to Koppel under the terms of the law of March 12, 1870, which repealed Law No. 25, of July, 1867. Paragraph 1 of the new law authorized the President to grant concessions to any company, or private individual, desiring to land a cable on the coast of Colombia and to connect such cable with the national telegraph lines. The last-mentioned law was again repealed by Law No. 56

of June 22, 1874, which was identical with the former except for the addition of Article 4, which authorized the Executive to assist, with funds drawn from the National Treasury, any company or private individual who would undertake to lay a submarine cable between Panama and the coast of Peru, via Buenaventura. In 1903 the Colombian Government agreed to extend the exclusive concession granted the Central and South American Telegraph Company with the modification, however, that the new concession should be for only 20 years, that is from August 25, 1904, to August 25, 1924. In pursuance of this agreement the Legislature issued Law No. 49 of 1904 published in the Diario Oficial No. 11975 of January 9, 1904.

Due to the steady and rapid increase of cable messages, which pass through Buenaventura, the only cable receiving station of Colombia, the Central and South American Telegraph Company in 1919 proposed to the Government the establishment of another cable station on the Atlantic coast, and finally made a contract with the Ministry of the Government to establish, maintain and operate a cable service between Cartagena and other seaports of the Atlantic coast, and connect them with the "All American" system of cables, and also with the cable system of Venezuela, if satisfactory to that Government.

WIRELESS TELEGRAPH

The subject of wireless telegraphy is commented upon in the Annual Report of Gregorio Perez, dated Bogotá, July 4, 1911. Under the heading "Cable Submarino y Telégrafo Inalambrico," Perez wrote: "During the past nine months a proposition has been submitted to the Minister in charge of the postal and telegraph service to lay a cable, also four propositions for the installation of wireless stations upon the Atlantic coast and in the interior of the country. This office has made an exhaustive study of each of these proposals and submitted a report to the Minister on March 16, 1911. It is the opinion of the writer, bearing in mind the first cost, and the expense to be borne by the National Treasury of maintaining the service, that the four latter proposals would mean a heavy loss. Our Treasury at present is scarcely able to keep up the land telegraph and, even assuming that our financial condition improves, we should rather devote ourselves to better the existing plant. Thereafter, and only then, should we think of installing wireless stations, such as other South American States whose financial condition is far superior to that of Colombia to-day possess or are acquiring."

Nevertheless, the Minister of the Interior decided to submit a draft of a law to the 1911 Congress which authorized the President to equip North and South Colombia with wireless stations and appropriated

200,000 pesos for that purpose, which amount was raised to 300,000 pesos during the discussion of the project in the Senate. About that time the Government received a proposal from the United Fruit Company for the installation of a wireless station in Santa Marta. A 20-year concession was granted the United Fruit Company in July, 1911, which included a provision to transmit gratuitously all Government messages referring to national affairs.

The Gesellschaft Für Drahtlose Telegraphie likewise presented a proposition to the Government whereby this company offered to install a wireless station in Cartagena, provided the company were granted a 30-year concession to operate the plant, and further offered to turn over the property to the Colombian Government at the expiration of the agreement. In May, 1912, the Government contracted with this German company for the installation of a wireless station in Cartagena, granting the company a 30-year concession to operate the station. At the expiration of the concession the entire plant becomes the property of the Government. The Cartagena station, which was closed shortly after the outbreak of the European War, was reopened in 1920.

In January, 1913, the Government closed another contract with the same company for the erection of a wireless tower on the Island of San Andres. This work was finished in February, 1914.

The Government contracted with the Marconi Wireless Telegraph Company in September, 1913, for the installation of wireless plants in the cities of Buenaventura, Medellín, and Bogotá. These concessions are for 30 years.

Wireless stations exist also in Arauca, Orocue, Providencia, and Puerto, Colombia. The station at Puerto was opened on May 6, 1920. Other stations will soon be in operation in the cities of Baranquilla, Cali, Cucuta, Bucaramanga, Manizales, Tamalameque, Tumaco, and Riohacha. Upon the completion of these installations Colombia will be in a position to interchange wireless communication with any part of the world.

RATES

The first telegraph tariff was adopted on March 8, 1865, and provided for a charge of 80 centavos for a message not exceeding 12 words, and 5 centavos for each additional word, the address and signature being free. It was stated that for the purpose of popularizing the new service in Colombia the Government adopted rates almost identical with those then in use in the United States.

The next important change in rates made a charge of 25 centavos for each telegram not exceeding 10 words, sent over a distance not exceeding 20 leagues (110 km.) with a charge of 2½ centavos for each additional word and for each additional 110 km.

This rate was later reduced to 20 centavos, then after a time the first rate was adopted again, but during the interval a charge of 40 centavos was made for each telegram of 10 words. Due to the general demand of the public a decrease in the rates was decided upon and officially declared in Articles 58 and 59 of Decree 165 of 1876.

In 1881, the Government, in an attempt to extend the telegraph service to all classes, issued Decree 358, which reduced the rate to 10 centavos for each telegram of 10 words, irrespective of distance, and charged 10 centavos for each 5 words in excess. A special rate was provided for urgent telegrams, registered telegrams, etc.

It was expected that the increase in messages would largely compensate for the loss of revenue due to the reduction, but the revenue decreased while the volume of telegrams increased. For that reason the Government issued Decree 549 in 1881, raising the rate to 20 centavos per telegram of 10 words irrespective of distance, plus 10 centavos for every 5 words in excess, and twice the additional fee for special rates mentioned in Decree 358 of 1881.

The most important rate law enacted since 1881 is contained in Decree 1116 of 1910, modified in 1914 by Law No. 76, which in turn was modified by Decree 1487 of December, 1914. In accordance with the latter the charge for a private telegram over the National lines was fixed at 2 centavos gold

for each word, but it was stipulated that the minimum charge for a message should not be less than 10 centavos gold. In counting the words of a message the address and name of the addressee was to be included, but not the place of origin and date. For urgent telegrams the rate was 4 centavos gold per word; for press messages 1 centavo gold per word, and for telegrams of a special class 8 centavos gold per word.

As the Decree of December 24, 1914, is still in force, a complete translation of it will be given later on. An increase of these rates is advocated in the 1918–1919 report of L. Morales Berti, Administrator General of Telegraphs, in which it is proposed to base the rates upon the distances over which a message is sent.

STATE TELEPHONE

Prior to 1888 none of the annual reports of the officials in charge of the Telegraph Administration mentioned the telephone. It is first referred to in the report for 1888 of the Minister of Public Works, General Rafael Reyes, who wrote:

"Law No. 66, of May 6, 1887, published in the Diario Oficial No. 7037, grants exemption of duties and national taxes to long-distance telephone companies. In lieu of such privileges, the engineers Diódoro Sánchez and Roberto Becerra asked for the privileges mentioned in the above law. When their petition was considered by the Minister, Sr. Francisco Paris, it was refused for the reason that

'el Gobierno no creyó por entonces conveniente el establecimiento de líneas telefónicas.'"

In other words, the Government at that time did not think it advisable to construct telephone lines within the Republic.

A short time after this, however, the Minister decided to test the efficiency of telephone lines and, as a result, Mourlon & Co., of Brussels, were instructed to ship the necessary material for the construction of a telephone line between Bogotá and Chapinero. The material arrived on April 22, 1888, and a trial line was built to determine whether or not it would be advisable to install similar lines in the Republic.

Evidence of the rapid increase of interurban telephone lines is given in the report of the Director General of Posts and Telegraphs dated Bogotá, June 2, 1892: "In view of the notable increase in our country of interurban telephone lines, which in certain provinces have so multiplied as to replace the National Telegraph, the Director General urges upon the Legislature the importance of the enactment of a law prescribing rules and regulations for such lines."

Acting upon this suggestion, Congress on December 22, 1892, passed Law No. 98, which prohibited the construction of interurban telephone lines in Colombia, unless they were built by request of, or with the permission of, the Government. This

law, however, did not apply to such interurban or local lines which were already built. The law also authorized the Government to buy all existing telephone companies. Pending further legislative action in this matter, the Government was instructed to order a careful inspection of all telephone properties in the interest of the public service.

The above law is reembodied in Decree No. 1296, dated December 24, 1894, which contains additional regulations. Article I reads: "It is the monopoly of the Government to build interurban telephone lines within the territory of the Republic. The Government may, however, permit the construction of such lines, reserving to itself the right of supervision and of revocation of the permit in case of the wrong use of the lines, or in the interest of the public welfare."

The next articles established the conditions upon which the Government would issue a permit, also the monetary penalties if a line was built without a permit. Private telephone companies had to submit the names of all their operators for the approval of the Government, which could reject any or all of them. All private telephone companies or individuals that operated interurban telephone lines were compelled to apply to the Government for a renewal of their original permit. It was stipulated that as soon as the National Treasury was in a condition to do so, the Government should acquire the existing

interurban telephone lines, and, if the owner refused to sell, the Government was authorized to dispossess him of his property.

The only official report which contains a detailed statement of the long-distance telephone lines built by private parties estimates their total length at 1,500 km., July, 1898, of which 200 km. were in the Department of Panama.

From the 1919 report of the Director General of Telegraph it appears that the Administration had changed various telegraph lines to permit simultaneous transmission of telegraph and telephone messages. The report mentions especially the lines between the capital and Tunja, Tocaima, Girardot, Honda, and La Dorado. It also states that the Administration had instructed the Colombian Ambassador in Washington to get all available information about the best types of long-distance telephone apparatus. As the telegraph revenue has been impaired to some extent by the service offered to the public by the private telephone companies, the Administration proposes to install a large number of telephone sets in all important towns to serve as an auxiliary of the telegraph.

By Executive Decree No. 766, of April 10, 1919, the Administration was instructed to establish a telephone tariff equal to the existing telegraph rates with an additional charge of 20 centavos where it was necessary to call a person to a telephone station.

PRIVATE TELEPHONE SERVICE

Notwithstanding the fact that the Government has claimed the monopoly of telephone communication in Colombia it has left the field free to private enterprise. Quoting from a letter received from the former Director General of Telegraphs, Sr. Gregorio Perez, "la Nación no posee servicio alguno oficial de teléfonos. Las líneas que existen en el país son todas de propiedad particular, y el Gobierno no tiene el control de ellas." (The Nation possesses no official telephone service whatever. The lines existing in the country belong to private persons and the Government has no control of them.)

Under Article 139 of the Codigo Fiscal de Colombia, permits are granted authorizing the construction of telephone lines in accordance with the following procedure. A company wishing to install a local telephone system must first present a proposal to the local authorities, which is then passed upon by the municipal council of the district in which the company desires to operate. If the council approves the request of the petitioner, the latter receives a permit in the form of a concession for a definite number of years. If the service extends over more than one department, the petitioner must make a special contract with the various Departmental Assemblies.

Up to the year 1910 the number of telephones in

Colombia was exceedingly small. The American Consul at Cartagena who reported to the Department at Washington in August, 1910, on the telephonic development of Colombia, commented as follows:

"No national statistics upon the subject are obtainable, but it is known that with the exception of a very few of the larger cities and of a few mining camps the entire country is without telephone facilities."

At the close of 1920 there existed about a dozen private companies furnishing a local telephone service in Colombia. Of these the largest is the Bogotá Telephone Company, Limited, operating under a 50-year concession, with an authorized capital of £100,000 of which £63,164 have been issued and fully paid for. This company was registered in London on December 31, 1900, and was formed to acquire the telephonic installation in Bogotá which service had been started by an American in 1892. On January 1, 1920, the company had 2,279 subscribers, which represented about 38% of the total telephones in use in the country at that date. The rate for service is $36 per annum with an additional charge of $8 for the installation of the apparatus. It has recently been reported that a movement has been started to have the system taken over by the city of Bogotá and extended with additional long-distance service for the entire district.

Bogotá Telephone Company, Ltd.

January 1	Number of Telephones	Miles of Wire
1910	400	....
1911	720	1,350
1912	802	....
1913	....	....
1914	....	....
1915	1,144	....
1916	1,363	....
1917	1,609	....
1918	1,788	2,119
1919	1,829	2,123
1920	2,279	2,160
1921	2,557	....

Next in importance is the telephone system in the city of Medellín, which was installed in 1892, and was owned and operated by the departmental government of Antioquia. The system progressed very slowly, having but 400 subscribers at the end of 1912. On June 1, 1915, the plant was taken over by a private corporation known as the Empresa Telefónica de Medellín. The rates for service were $2.50 for business and $2.00 for residence telephones. In 1918 the installation was acquired by the municipality of Medellín, and is known as the Empresas Municipales, Ramo de Teléfonos. On January 1, 1920, there were about 1,200 subscribers connected to the Central.

Telephone service was started in Barranquilla in 1889 by an American, and was taken over in 1890 by Mr. J. P. Dieter, of Chicago, who also owned the

telephone plant in Santa Marta, the two systems operating under the name of the West India & Colombia Electric Company. The company's concession expired in October, 1916, and has never been renewed, although the company continues to operate under the name of the Compañía de Teléfonos de Barranquilla. In 1918 the municipal council attempted to organize a new telephone company in which it was to retain a controlling interest, but this attempt failed because of the opposition of local business men. The rates per month are $4.50 for business and $4.00 for residence telephones. The development of the exchange has been as follows:

January 1	Number of Telephones
1907	80
1908	93
1909	152
1910	221
1911	254
1912	305
1913	359
1914	385
1915	410
1916	435
1917	580
1918	590
1919	600
1920	610

The Empresa de Santander was established September 4, 1916, and furnishes a local and interurban service in Bucaramanga, Florida, Girón,

Lebrija, Piedecuesta, and Rionegro. The rates per month for service in Bucaramanga are $2.50 for business and $2.25 for residence telephones. In the smaller places the rate is $1.50. For interurban service the charge for a communication of five minutes varies from 15 to 45 cents. On January 1, 1920, the company had 280 subscribers.

In the city of Cartagena telephone service is furnished by the Empresa de Teléfonos de Cartagena. The exchange was opened in 1899 by Messrs. F. and A. Franco, local merchants, who received a 25-year exclusive concession. The rates per month are $3.00 if the instrument is purchased, otherwise the charge is $5.00. On January 1, 1920, the company had 260 subscribers.

The Empresa Telefónica de Cali, which was started in 1912, gives a local service in the city of Cali, to which 250 subscribers were connected on April 1, 1921. The rate for service is $3.00 per month. The company has recently extended its lines to the city of Palmira, where a new exchange has been opened with 45 telephones in use.

The Empresa Telefónica de Cúcuta, which was opened in 1890, has about 200 subscribers in the city of Cúcuta and suburbs.

In addition to the above there are small local exchanges in Santa Marta, Manizales, Monteria, Puente Pintada, and other places, besides private telephone installations on estates, mines, farms, etc.

Telephone Statistics of Colombia*

January 1	Number of Telephones	Miles of Wire
1908	1,200	1,000
1909	1,250	1,100
1910	1,300	1,200
1911	1,320	1,300
1912	2,000	1,350
1913	2,560	2,953
1914	2,953	4,357
1915	3,447	5,134
1916	4,773	5,797
1917	5,070	6,029
1918	5,233	6,478
1919	5,263	6,903
1920	5,935	7,161

*Partly estimated.

Telegraph Law of 1914

In consideration of the fact that Law No. 76, of 1914, partly modifies the telegraph rates, it is decreed that all rules contained in Chapter 9, third part of the Postal and Telegraph Law, shall continue to be in force, except Article 3, which is altered by the above-mentioned Law. The following are the rates specified in Law No. 76, of 1914.

ARTICLE 1—For a private telegram transmitted over the national lines, 2 centavos gold for each word, but the minimum charge shall not be less than 10 centavos gold.

ARTICLE 2—In counting the words contained in a message the address and name of the addressee or firm shall be counted, but not the place of origin and the date.

ARTICLE 3—For telegraph conversations (conferencias telegráficas) the rate is based on a charge of 40 centavos gold for each minute during the first hour, and for excess time an additional charge of 50% of the original charge.

ARTICLE 4—The name of all Colombian places to which a telegram is directed shall be counted only as a single word.

ARTICLE 6—For urgent telegrams the rate is based on the number of words they contain, and is 4 centavos for each word.

ARTICLE 7—Telegrams in a foreign language or code messages are to be admitted on payment of twice the ordinary rate. The same charge is made for telegrams requesting acknowledgment of receipt and registration.

ARTICLE 9—Telegrams directed to various addresses may be delivered to any one of the addressees, and in case the others require a separate copy they must pay the customary charge made for the delivery of a telegram.

ARTICLE 10—Telegrams having the same contents, but directed to different persons, shall pay the customary charge for each place of destination.

ARTICLE 11.—All telegrams handed in at the office after 9 P.M. shall pay the charge contained in Article 34 of this Law.

ARTICLE 12—To all money-order telegrams shall be affixed a one-centavo stamp for each 100 pesos or fraction of 100; in case such telegrams contain an indefinite amount, there shall be affixed a stamp of the value of 50 centavos.

ARTICLE 13—Receipts delivered by telegram must bear a stamp of two centavos, whatever may be the amount.

ARTICLE 14—All telegrams transmitted over the national lines with request for "return receipt" shall pay an additional charge equal to that of an ordinary message of 10 words.

ARTICLE 17—Messages in unknown codes are not admitted. Persons who wish to make use of unknown codes must send a copy of such telegram to the chief of the telegraph office in his district and another copy to the Central Telegraph Administration.

ARTICLE 19—Telegraph messages to be paid for by the addressee are not permitted.

ARTICLE 30—The sender of a message is entitled to cancel the telegram before it is sent, but the charge paid for the message will not be refunded.

ARTICLE 34—In all national telegraph offices service will be given from 6 A.M. to 9 P.M. on week days, and from 8 to 11 A.M. and 6 to 9 P.M. on Sundays and holidays.

Gold Peso (100 centavos) = $1.00 U. S.

(Taken from "Revista Postal y Telegráfica," Colombia, January, 1915, p. 6.)

Telegraph Statistics of Colombia

Year	Number of Paid Telegrams	Gross Revenue (Pesos)	Number of Official Telegrams	Number of Telegraph Offices	Extension of Telegraph Wire (Kilom.)
1865	...	...	...	2	20
1870	5,000*	...	...	...	412
1871	5,640	1,926	...	...	975
1872	11,301	4,781	...	...	1,000
1873	47,127	13,169	...	...	1,200
1874	75,345	20,029	...	...	1,317
1875	93,375	33,632	...	53	2,190
1880	130,745	34,974	17,485	82	3,120
1885	271,362	68,154	29,451	102	5,000
1890	...	...	...	229	8,049
1892	...	...	...	273	9,614
1894	317,507	78,315	...	319	10,572
1895	...	83,053	...	...	...
1896	371,421	95,674	...	303	11,937
1907	1,036,423	246,813	447,680	524	16,632
1908	1,189,752	272,986	532,843	...	16,500
1909	1,232,637	290,482	495,621	...	17,000
1910	1,304,106	308,799	500,000	...	17,355
1911	1,462,323	336,031	478,882	448	17,500
1912	1,694,660	380,958	557,699	500	18,000
1913	1,926,616	463,754	632,274	579	19,098
1914	1,937,676	527,489	553,402	600	19,100
1915	2,270,046	539,104	684,283	634	19,209
1916	2,537,305	602,224	694,116	656	19,900
1917	2,690,847	708,988	757,011	662	20,059
1918	2,778,537	829,739	861,131	670	20,283
1919	3,176,209	1,083,174	1,010,180	678	20,597

*1865 to 1870.

NOTE.—No data obtainable from 1897–1906.

Sources of Information

1. "El Codigo Fiscal de Colombia," 1913 edition.

2. "Datos y Documentos principales relacionados con el establecimiento y desarrollo del telégrafo en Colombia desde su inauguracion hasta el presente." Bogotá, 1909.

3. "Informes," or Annual Reports of the Director General of Posts and Telegraphs, submitted to the Minister of Government, Department of the Interior, 1890 to 1920.

4. "Revista Telegráfica"—the official publication of the Postal and Telegraph Administration, 1911 to 1921.

5. "Disposiciones relativas a la organización y reglamentación de los Ramos Postal y Telegráfico," Bogotá, 1915.

6. Annual Reports of the Bogotá Telephone Company, Limited, 1910 to 1921.

7. Information received from American Legations and Consulates in Colombia.

8. Information received through private correspondence:

(*a*) With officials of the Government Telegraph.

(*b*) With officials of Telephone Companies.

History of the Telephone and Telegraph *in* Uruguay

1886-1925

By

VICTOR M. BERTHOLD

of the

American Telephone and Telegraph Company

NEW YORK

Nineteen Twenty-five

URUGUAY

Area: 72,153 square miles
Population: 1,696,000 (estimate for 1925)
Capital: Montevideo. Population 418,000

THE TELEGRAPH IN URUGUAY

Uruguay is conspicuous among the South American republics by the fact that a public telegraph service, furnished by foreign corporations, existed in the country for twenty-one years before the Government decided to start building a national telegraph system. Moreover, after the completion of the first three main routes, it took the Government another five years to reach the conclusion that their administration and operation should be a government function and to combine the telegraph with the postal service.

The history of the telegraph in Uruguay may be divided into three distinct periods. The first commences with the construction of the lines between Montevideo and Buenos Aires (Argentine) in the year 1866 by the Compañía Rio de la Plata and ends on January 13, 1887, the date on which the Government signed the first contract with Mr. F. A. Lanza for the creation of a national telegraph system. The second period is represented by the five years during which the national telegraph lines were operated and managed by the contractor. It terminates with the issuance of the decree of March 17, 1892, which transferred these lines from the contractor to the Post Office. The third and last period starts with the administration and operation of the telegraph by the Postmaster-General, and continues to the present time.

The Government permitted the telegraph service to remain for 21 years under control represented mostly by English capitalists. Throughout most of

this period the incessant military disturbances prevented the Government from devoting the resources of the republic to the development of commerce and industries through the creation of a national telegraph system. It is significant that during the foreign and civil wars that occurred from 1866 to 1877 the entire plant of the Compañía Telégrafo Oriental was twice razed to the ground.

Historical Survey

At the time of the opening of the first telegraph line (Montevideo-Buenos Aires), Uruguay had joined Brazil and Argentine in the Paraguayan war which lasted until 1870. Only fifteen months after the outbreak of the war Colonel Venancio Flores, who had been declared Dictator of the Republic of Uruguay in 1865, was assassinated in Montevideo by members of the Blanco party. During the presidency of his successor, General Lorenzo Batlle, who remained at the head of the Government until 1872, the country was visited by two distinct catastrophes (in the years 1868 and 1869), a frightful epidemic of cholera and a financial crisis. The next president, Doctor José E. Ellauri, on account of a military revolution, failed to complete his term of office, and don Pedro Varela, who had been acclaimed by the army as Chief of the State, was likewise forced to resign. Colonel Lorenzo Latorre, elected in 1879 as Constitutional President, vacated his post almost immediately, declaring in a proclamation that the Uruguayans as a race were ungovernable. Doctor Francisco Vidal, his successor, was replaced in 1882 by General Santos, who, in turn, caused the reelection of Vidal in 1886, at which time the country was again in the throes of a revolution.

The above brief outline of the political events fully warrants the statement that a Government torn by incessant political strife to the end of the year 1886

was unable to give much attention to the development of the telegraph system.

First Period, 1866-1887

Introduction of the Electric Telegraph in Uruguay and its Development by Private Concerns.

The Compañía Telegráfica Rio de la Plata, registered in London in 1865, obtained from the Government of Uruguay a 15 year exclusive concession for telegraph service between the cities of Montevideo and Buenos Aires (Argentine), and immediately thereafter constructed the first telegraph line, which was finished in 1866. The line started from Montevideo and passed through Canelones, San José, Rosario and Colonia, a distance of 233 km., thence by submarine cable (160 km.) through the Bay of Rio de la Plata to Buenos Aires (Argentine), the total length of the line being 393 km., (244 English miles). In each of the cities through which the line passed the company installed a telegraph office. Although the concession expired in 1880, the company enjoyed an exclusive privilege until 1888, when other companies started to compete for the lucrative telegraph business between Montevideo and Buenos Aires.

The year 1873 witnessed the establishment of three new enterprises: the Compañía Telegráfica Platino Brazilera, the Compañía Montevideo Brazilera, and the Empresa de Telégrafo Oriental.

Compañía Telegráfica Platino Brazilera

This company, which received a non-exclusive franchise, installed telegraph offices in Montevideo, Canelones, Santa Lucia, San José, Florida, Durazno, Porongos, Mercedes, Dolores, Fray Bentos, Paysandu, Salto and Santa Rosa del Cuareim. A few years after its organization the company was taken over by an English concern, the London Platino Brazilian Telegraph Co., Ltd., which at once started to construct a new land line at an expense of 400,000

pesos. On account of the small volume of traffic the company failed to earn sufficient revenue to pay interest on the capital investment. After the Uruguayan Government had built the national lines, which paralleled those of the company (1894-1897), the traffic over the lines of the latter due to severe competition steadily declined so that in 1907 the company was forced to sell its entire plant to the Government. Statistics published in the Anuario Estadístico de la República Oriental del Uruguay credit the company with operating 829 km. of telegraph line (515 miles).

Compañía Montevideo Brazilera

In the year 1873 señor Marcoartú received an exclusive franchise from the Government of Uruguay to lay a submarine cable between Montevideo and Chuy. The cable was placed in operation in 1875 consisting of two sections, namely, Montevideo-Maldonado (130 km.) and Maldonado-Chuy (221 km.). At this point it was joined to the cable connecting Chuy with Rio de Janeiro (Brazil), 2817 km. A few years later the franchise and cable were taken over by an English concern called the Montevideo Brazilian Company, which in turn sold out to the Western Telegraph Company which had also a working agreement with the Compañía Telegráfica Rio de la Plata, covering the route Montevideo-Buenos Aires.

Empresa de Telégrafo Oriental

In 1870 a capitalist who resided in Montevideo obtained from the Government a 40 year exclusive franchise for the construction of telegraph lines in the eastern part of the republic. The reason for such a long term concession was that these lines had to be built through very sparsely populated localities with which the Government for military purposes desired to have means of direct telegraph communication. It has already been mentioned that the entire plant of

this company, consisting of 430 km. of line (267 miles), was twice razed to the ground during the civil wars. In 1873 the Empressa de Telégrafo Oriental, the company which had been formed on the strength of the concession, opened public telegraph offices in the cities of Montevideo, Pando, Minas, Treinta y Tres, Artigas and Yaguarón, and a few years later installed additional offices in Pan de Azúcar, Nico Perez, San Carlos, Maldonado, Rocha, Lazcano and Chuy.

On April 27, 1877, General don Máximo Tajes, the President of the Republic, and don Eduardo Jones, then manager of the Telégrafo Oriental, signed a contract by which the Government handed over to the company which had been formed on the strength only State telegraph line, which the Administration had built in 1877 between Artigas and Melo, a distance of about 50 miles. For the transfer of this line to the company, the latter agreed to construct, at its own expense, a direct line between Treinta y Tres and Melo, by which the Government obtained a second telegraph route in the eastern part of the republic. The new contract was drawn so as to expire simultaneously with the franchise granted in 1870. In lieu of the administration and operation of the line, Artigas-Melo, the contract also stipulated that the company should receive 200 gold pesos per month, and should immediately reduce the existing telegraph rates to Melo, 25% for private telegrams and 75% for press messages.

The Telégrafo Oriental continued to exist until 1914 when the plant, then consisting of 1577 km. (979 miles) of telegraph line, was absorbed by the Government, and amalgamated with the national telegraph lines.

Second Period, 1887-1892

The official documents, published by the Dirección General de Correos y Telégrafos in 1899, relating to

the contracts signed by the Government for the construction of the national telegraph lines show that Francisco A. Lanza, general manager of the Platino Brazilera Company, on July 13, 1886, proposed to the President of the republic the building of three main routes comprising: (1) a line between Dolores, Palmira and Carmelo, about 60 km. (37 miles); (2) a line from San Fructuoso to Rivera, about 125 km. (78 miles); and (3) a line from San Fructuoso to Paso de los Toros, about 140 km. (87 miles), or a total of 325 km. (202 miles), at a cost of 39,950 gold pesos, which sum the Government should pay in monthly instalments of 3000 gold pesos.

Lanza's offer was accepted on July 13, 1887. Under the terms of this contract the following national telegraph lines were constructed:

	Date of Inauguration.
Carmelo, Palmira to Dolores.........	Sept. 16, 1887
Dolores to Soriano..................	Sept. 20, 1887
Durazno to Paso de los Toros........	Dec. 27, 1887
Paso de los Toros to San Fructuoso...	Dec. 27, 1887

During the next two years Lanza obtained additional contracts for the construction of six new lines, and for the laying of a short submarine cable from Santa Rosa to the Island of Flores. The Government also signed a contract with Máximo R. Clavell for a telegraph line between Colonia and Carmelo, and still another with Eduardo Jones for a branch line from Treinta y Tres to Melo.

The subjoined table, found in the report of L. Strauss, Chief Engineer of the national telegraph system, dated March 6, 1892, is a summary of the national lines that had been built under contracts with private individuals, and shows the date of contract, length of line, date of inauguration, and the amount paid by the national Treasury to the contractor:

Statistics of State Telegraph

LINE FROM	Length of Line	Date of Contract	Date of Opening of Line	Cost (pesos)	Name of Contractor and Administrator
ɪrazno to Paso de los Toros............	64 km.	July 13, 1887	Dec. 27, 1887	8,492	F. A. Lanza
ɪrazno, Carmen to Sarandí.............	98 "	July 24, 1888	Oct. 15, 1888	12,408	" " "
ıso de los Toros to San Fructuoso........	134 "	July 13, 1887	Dec. 27, 1887	39,950	" " "
:ralta to San Gregorio de Polanco........	58 "	July 24, 1888	Oct. 17, 1888	7,292	" " "
ın Fructuoso to Rivera.................	126 "	July 13, 1887	Feb. 26, 1888		" " "
ıcuarembó, Grande, Cuñapirú to Corrales..	20 "	July 24, 1888	Nov. 10, 1888	3,375	" " "
ivera, Cuchilla Negra to San Eugenio....	138 "	July 24, 1888	Feb. 25, 1889	26,538	" " "
ın Eugenio, Cuaró to Santa Rosa........	133 "	July 24, 1888	Feb. 23, 1889	20,850	" " "
ɔlonia to Carmelo....................	95 "	May 14, 1888	June 15, 1888	11,119	M. R. Clavell
ırmelo, Palmira to Dolores..............	65 "	June 13, 1887	Sept. 16, 1887		F. A. Lanza
ɔlores to Soriano......................	20 "	June 13, 1887	Sept. 20, 1887	2,620	" " "
:ontevideo to Isle of Flores*............	15 "	June 28, 1888	Jan. 9, 1889	21,957	" " "
rtigas to Melo........................	90 "	April 27, 1887	May 1, 1887		E. Jones
ıso de los Toros to Corrales............	200 "	July 24, 1888		6,155	F. A. Lanza
Total..........................	1,256 km.				

*Cable.

Lanza's Offer to Operate and Maintain the State Telegraph Lines

The most important event of the second period was an offer made by Lanza, on June 30, 1888, not only to build the national telegraph lines, but also to operate and maintain them. The following paragraph is a quotation from the contract entered into between the President, General don Máximo Tajes, and don Francisco A. Lanza:

"Que el compareciente Lanza se presentó proponiendo hacerse cargo de la administración y dirección de las líneas telegráficas que se vienen construyendo en el país bajo los auspicios del Superior Gobierno comprendiendo no sólo los telégrafos nacionales, sino también las oficinas telegráficas del Estado, por los precios determinados en su propuesta."

(That the said Lanza presented himself (before the President) and proposed to assume the administration and management of the telegraph lines that are now in process of construction in the country by order of the Supreme Government, including in this offer not only the national telegraphs, but also the state telegraph offices, on payment of the sums stated in his offer.)

This contract was to hold good for three years. In paragraph 1 of this document Lanza assumed the obligation to maintain the lines in perfect working condition. As we shall see later on, the contention that Lanza failed to fulfill this obligation was one of the main reasons why the Government determined to place the national telegraph system under the direction of the Post Office. On account of its importance, the original language of the paragraph is quoted:

1. "Me obligo a mantener las líneas telegráficas nacionales, construidas y a construirse, en *perfecto estado,* reemplazando el material que se deteriore por la acción del tiempo o casos analogos."

   (I obligate myself to maintain in perfect condition the national telegraph lines that have been constructed, or those to be constructed, and to replace the material that deteriorates due to the action of time or analogous causes.)

Lanza likewise took the responsibility of collecting and accounting for all traffic receipts, and of furnishing monthly reports to the state Treasury. He also promised not to increase the existing rates and to pay the salaries of all telegraph employees. All sums handed over by the contractor to the Government were to be used for paying Lanza, in accordance with various stipulations contained in the contract, which provided that he should receive each month:

1) 90 gold pesos for each of the national telegraph offices
2) 20 " " " " " " " telephone "
3) 90 centesimos for the repair and maintenance of each kilometer of national telegraph lines, excepting the cable to the Isle of Flores
4) 250 pesos in consideration of his administrative and accounting work and providing the necessary material.

From September 15th, 1887 (the date when the first national telegraph offices had been opened) to May 1st, 1888, Lanza was to receive 150 gold pesos per month.

Toward the end of the year 1889 Lanza laid before the Government a balance sheet, which showed that the amount then due him for the construction of the national telegraph lines, including their management, amounted to 12,363 pesos. An immediate settlement of his account was requested. The Treasury Department, after an examination of the items submitted, disputed the correctness of various charges, refused to accept the amount claimed for the maintenance of the national telegraph lines, and disagreed with the statement that 3000 poles had already so deteriorated that their repair would require an additional capital outlay of 12,600 pesos.

To get full information about the actual condition of the national telegraph lines and the financial outcome of the service, the Postmaster General in October, 1900, had created a special section called "Ofi-

cina de Claves y Comunicaciones Telegráficas", and had placed the engineer, L. Strauss, in charge of this office.

Report of Strauss

On March 6, 1892, Strauss submitted to the Postmaster General, señor Cipriano Herrera, a carefully prepared detailed report covering all contracts made by the Government for the construction of national telegraph lines, the condition and cost of the plant, and the financial result of the service. The report states that the Republic of Uruguay then possessed 1,256 km. (780 miles) of national telegraph lines, for which the public Treasury had paid 150,000 pesos; also that from this heavy investment neither the Government nor the public had derived any benefit whatever. Moreover, the result of this investment had been an annual deficit of more than 30,000 pesos, including in this amount all sums paid by the State in lieu of "subventions". In reply to the question: "What is the reason for this anomalous situation?" the answer is: "There are many and various causes, the majority of which are attributable to the unbounded good faith and the credulity of the State." Among the contributory causes mentioned are the faulty routes adopted by the contractor for the construction of the national telegraph lines, the material employed and the contract made by Lanza for the administration of the state lines whereby the operating expenses had been increased enormously. Figured on the 1,256 km. of national telegraph lines it is alleged that the Government had paid to Lanza as "deficits" from Sept. 1, 1887 to January 31, 1892, the amount of 55,441 pesos, an average of 1,046 pesos per month.

Although the national telegraph system comprised 1,256 km. Strauss asserted that the State had not a single line connecting directly with the capital. Thus a message, originating in an office of the national sys-

tem, destined for Montevideo, had to pass over 250 km. of line owned by private parties.

Next he proceeded to investigate the reason why the telegraph traffic in Uruguay was so light and concluded that this condition was due to "the extremely high rates" which the private telegraph companies charged the public, also to the custom of figuring the cost of a message on the basis of 10 words, "whereby the public had to pay for a number of entirely unnecessary words." The correct method, he concluded, should be a charge per word, by which the cost would correspond to the amount of work performed. To illustrate this point Strauss cited the following example: The distance from Montevideo to Rio de Janeiro is 1,800 km. (1,118 miles). According to the then existing tariff the cost of a message over the land-line Montevideo-Canelones, 46 km. (28 miles) was twice that of a message via cable from Montevideo to Rio de Janeiro.

Taking up the subject of the cost of the construction of the national telegraph lines by Lanza, Strauss showed that the State had paid out the following sums:

For 1,056 km. of land lines..........	127,681	pesos
For material bought by the Government	6,445	"
Additional material supplied by Lanza.	7,036	"
Land line and cable to Isle of Flores..	21,956	"
For line Colonia-Carmelo...........	11,118	"
For line Melo-Artigas	4,003	"
Total......................	178,239	pesos

Excluding from the total the 21,956 pesos paid for the cable left 156,283 pesos as the total amount paid by the Government for the national telegraph lines.

An examination of the monthly payments due Lanza, in accordance with his contract, disclosed that the Government had paid him 2,299 pesos regularly. Included in this total was the charge of 20 pesos for

each one of the national telephone offices. Figured on the eleven offices owned by the Government, the amount paid out annually amounted to 2,640 pesos, bringing up the total of this item for the period Sept. 1, 1887 to Feb. 1, 1892 to 8,965 pesos. Against such expenditure the Government during the same period had received as revenue for toll conversations the sum of 94 pesos, leaving a deficit of 8,871 pesos.

Finally, in accordance with the contract the Government was obliged to pay 90 pesos for every national telegraph office, plus 90 centesimos for the repair, supervision and maintenance of each kilometer of line, a yearly expenditure of 10,070 pesos. Admitting that all telegraph lines were subject to repairs and unforseen accidents, Strauss writes:

"Pero nunca, absolutamente nunca es creible que para conservar en perfecto estado de funcionamiento 932 kilómetros de línea se necesiten más de diez mil pesos anuales, es decir, el 8% del capital invertido en la construcción de ella, de manera que a los doce y medio años la línea vendria a costar el doble que en la fecha de su construcción."

(But never—I say emphatically—never can it be believed that, in order to maintain 932 kilometers of line in perfect working condition, it requires 10,000 pesos annually, that is, 8% of the capital invested in the construction of the lines, so that, after twelve and a half years the lines would cost twice the amount paid for their original construction.)

The conclusions reached by Strauss are expressed in the subjoined paragraphs:

1) The contract between the Government and Lanza, dated June 28, 1888, for the term of three years, expires on June 28, 1891, and should neither be renewed nor extended.

2) The newly created General Direction of Posts and Telegraphs should administer and operate all national lines.

3) A new line should be constructed between Montevideo and Durazno.

4) Several new telegraph offices should be installed.

5) After a careful inventory the Government should take possession of the existing national telegraph lines, and

ascertain if they were in perfect working condition, as required by the contracts of June 30, 1888 and Oct. 14, 1890.

6) A careful examination should also be made of the various laws relating to the telegraph service, of the contracts and franchises granted to private concerns, also of the extensions obtained after the expiration of these franchises, the more so as the concessionaires frequently had failed to fulfil their contractual obligations.

On the strength of this report, on March 17, 1892, the Government, through the Minister of Government, issued the following decree:

Art. 1. Commencing with the date of the present decree, the Post Office Department shall supervise and manage the national telegraph, and for this purpose the name of the department shall be "Dirección General de Correos y Telégrafos."

It will be seen that this decree did not include the plant of the Telégrafo Oriental which, as has already been stated, continued to operate until 1914.

Another noteworthy event of the second period was the granting of a concession in 1889 to the Compañía Telegráfico-Telefónica del Plata, which introduced a simultaneous telegraph and telephone service between Montevideo and Buenos Aires. Further particulars will be found in the chapter entitled "Telephone Service".

Third Period, 1892-1925

Immediately after the taking over of the national telegraph by the Postmaster-General, the Government authorized the construction of new lines to connect those that existed with Montevideo, and to provide a direct national service with Buenos Aires. The use of galvanized iron wire was discontinued. In its place the Government demanded the use of the recently invented bronze-silicon copper conductor of high conductivity. Finally, by decree of April 25, 1894, the

Government ordered the construction of departmental telephone lines.

Both the rebuilding of the national telegraph system and all new construction was entrusted to Carlos Young, an able engineer, whose report of January 28, 1898, addressed to the Postmaster-General, señor Eduardo V. Fernandez, covers the work accomplished from March, 1892, to December, 1896, and includes the account of Juan José Castro who inspected the national telegraph lines prior to their acquisition by the Government. This important document gives a history of the national telegraph. Speaking of the route, Young points out that it was unreasonable for the Government to expect Lanza to build lines which would injure the business of the Telégrafo Platino-Brazilero. "Las líneas nacionales, en sus trazados, no fueron otra cosa, que simples extensiones o ramales de las líneas de esa empresa." (The national lines by the routes chosen were merely branches of the telegraph lines of that company.) To rectify this error it was decided to build a new direct line from Montevideo to Durazno, at which point it would connect with the state lines constructed formerly by Lanza between Durazno, Rivera and Santa Rosa. In December, 1893, the actual work commenced, and by February, 1894, the new line Montevideo-Durazno had been finished. Henceforth, messages originating in any of the old national telegraph offices could be transmitted directly to Montevideo without passing over lines of a private telegraph company.

At the same time the Administration opened new telegraph offices in Las Piedras, Canelones, Santa Lucia, Florida, Durazno and Trinidad and introduced a uniform tariff for telegrams, namely, 30 centesimos for the first 10 words of a message, plus 2 centesimos for each additional word. This sweeping cut forced the Telégrafo Platino-Brazilero to reduce its rates to the same level for all points reached by the national telegraph lines. Thus, instead of paying 2 pesos for

10 words for a message to Santa Rosa, and 50 centesimos for a message to Durazno, the public could now send a 10 word telegram for 30 centesimos.

Another important new line was finished between Montevideo, 25 de Agosto, San José, Nueva Helvecia, Rosario and Colonia. At the same time the old line, connecting Colonia with Cuchillas, Carmelo, Palmira and Dolores received a thorough overhauling and was equipped with a metallic circuit of bronze silicon copper. Finally, at the beginning of 1896 a third new line was built from Dolores to Mercedes and Fray Bentos.

The report of Carlos Young concludes with a table showing the extent of the national telegraph lines on December 31, 1897:

Statistics

LINES	Kilometers Line	Kilometers Wire	Cost per km. Wire Single	Cost per km. Wire Metallic
Montevideo-Fray Bentos	434	878		88.22 pesos
Montevideo-Durazno ..	136	406		90.09 "
Durazno-Trinidad.....	40	40	58.49 pesos	
Colonia-Soriano.......		175	149.00 "	
Durazno-San Fructuoso	200	404	149.00 "	181.00 "
San Fructuoso-Rivera-Santa Rosa.........	396	399	149.00 "	
Durazno-Sarandi del Yi	97	97	149.00 "	
Peralta-San Gregorio..	58	58	149.00 "	
San Fructuoso-Cuñapirú-Corrales.......	19	56	149.00 "	
Montevideo to Observatory of Villa Colón..	3	17	35.77 "	
Fray-Bentos to the Liebig Salt Works.....	2	5		35.77 "
Plant in the Capital of the Republic........	6	17		54.33 "
Cable from Punta Carrasco to Isle of Flores	16	15	1212.00 "	
Total..........	1,407	2,567		

Shortly after the taking over of the national telegraph. the Administration had issued a new set of

rules and regulations, called "Reglamento Nacional" or rules governing the telegraph service. This is mentioned in the report of April 12, 1896 by the Chief Accountant of the Comptroller's Office, señor don Juan Rampon. By Article 14 of the Reglamento Nacional, telegrams were classified under eight divisions, i.e.: urgent, registered, collect, prepaid answer, multiple, to be forwarded by mail, code, and press messages.

The lack of printed annual reports of the official in charge of the state telegraph, and the failure of the Minister of Industries to furnish detailed information about the service sufficient for the writing of a continuous history from 1896 to the present, obliges us to look for other sources of official information. Fortunately, there exists an official communication, written toward the end of 1913 by F. Garcia y Santos, Director General of the Postal & Telegraph Service in Uruguay, in answer to a request by A. S. Burleson, then Postmaster-General of the United States. To understand the raison d'être of this communication, the reader is reminded that Mr. Burleson strongly advocated the amalgamation of the telegraph service of the United States with the Post Office. It is needless to say that Mr. Burleson's advocacy of the union of these two services under government management utterly failed to gain the support of the people of the United States who recognized the many grave dangers inherent in the proposition, and who knew from long experience that the private telegraph services in the United States were fully adapted to the country's needs. Aside from other objections, it is evident that the result of a public service in a country with an area of 72,200 sq. miles and a population of about one and a half million, requiring less than 700,000 telegraph messages annually, could not serve as a standard of comparison to be applied to a country with an area of 3,027,000 sq. miles and a popula-

tion in excess of 100,000,000 inhabitants. However, as a matter of history, the letter of señor don F. Garcia y Santos is of interest.

Report of the Director General

The communication opens with the polite regret of the writer that he is not in a position to furnish Mr. Burleson copies of printed annual reports of the Department, which "would be of little use." For this reason the Director General prefers to submit to the Postmaster-General of the United States a synopsis of the actual organization of the telegraph in Uruguay from 1892 to 1913.

"Since the year 1892 the Government of Uruguay, through the Postal Department, has managed the state telegraph service. Prior to 1892 the state telegraph lines were operated by a private contractor, who in accordance with an agreement between the Government and himself, received a fixed remuneration in lieu of management, and an additional sum based upon the maintenance per kilometer of line. The tariff then in use was one peso for the first 10 words and 0.50 pesos for each subsequent 10 words. (Values in Uruguayan gold pesos, equal to $1.04 U. S.) Under private management the revenue derived from the transmission of private telegrams (official messages being gratuitous) did not pay the expense of administration and maintenance of the line, and thus the State each month had to pay out from the Treasury considerable amounts of money to make up the loss.

"From 1892, when the above mentioned contract expired, the Government entrusted the administration of the state telegraph service to the Postal Department. The latter immediately commenced the construction of a number of additional lines to join those formerly built by the contractor in distant parts of the country with the capital. Having finished this task, the Department reduced the rates for private messages and established a uniform charge, namely 0.30 pesos for the first 10 words and 0.02 pesos for each additional word, the address and signature not being counted. All Government messages, also those sent from public offices especially authorized by the Government, enjoyed the franking privilege. Had these messages been paid for at the ordinary rate the revenue from this service would have netted from 18,000 to 20,000 pesos annually.

"In 1893, after the introduction of the reduced rates, the monthly receipts from the state telegraph amounted to only 10,000 pesos. Twenty years later, 1913, the receipts from 400,000 messages, representing the transmission of 5,500,000 words, had increased to 163,000 pesos.

"While this difference is considerable, it should also be remembered that during this period the Department had continued with the construction of new lines, and that the Uruguayan telegraph plant had been connected with that of Argentine and Brazil.

"The Government also acquired an important telegraph line, formerly operated by the Platino Brazilian Telegraph Company, and at the present time, 1913, is taking over another important private telegraph line known as the 'Telégrafo Oriental', due to the expiration of its concession. The Government had granted the latter a 40-year franchise, with the proviso that, at its expiration, the entire property of the concern should revert to the State. Consequently there are now within the territory of the republic only government owned and operated telegraph lines, besides railroad telegraph lines, and three lines used for international service with Buenos Aires, Brazil and Europe. The latter are the property of the Compañia Telegráfica-Telefónica del Plata, The River Plate Telegraph Company, and the Western Telegraph Company. The operation of the state telegraph lines nets the Government a profit of 22,000 pesos annually on the total revenue of 163,000 pesos. The expense for salaries of the personnel is about 127,000 pesos, for repairs and maintenance 10,000, for tools 4,000, a total of 141,000 pesos. The expense of operating the former Telégrafo Oriental is provided by appropriation and amounts to about 50,000 pesos yearly.

"It is evident that in the survey of the net revenue there should be added the value of official service. If so, the profit which the Government derives from the state telegraph reaches 60,000 pesos, without taking into account other benefits which come to the State from the administration of the telegraph service.

"As stated before, the Post Office manages the telegraph, i. e., the personnel of the postal offices also attends to the telegraph service, because in Uruguay all telegraph offices are combined with the postal offices. This combined function, which can be performed without detriment to either service, produces here the favorable financial result. If we had separate management, as well as operation, for these two services, the expenses would be considerably larger and no doubt, instead of a net revenue, there would be a deficit.

"So far we have considered only the actual organization of the telegraph. The following statements refer to a plan of reorganization of both the postal and telegraph services which the Government now has under consideration, a work which evidences the deep interest the Government takes in all services of communication.

"Up to the present (1913) the management of the Postal and Telegraph Department has been a dependency of the Ministry of Industries. The Department was divided into various sections, such as Postal, Telegraph, Money Orders, Registration, Administration, etc., a central office being established in each department of the republic. The gross revenue from the Postal and Telegraph Service goes into a general fund. The expenses of the services are taken care of by budget appropriations. Under this regime, which is based on the centralization of all public funds, any excess of income over expenses (which amounts to about 90,000 pesos annually) is used to pay for other services, entirely independent from the Postal and Telegraph.

"Our Chamber of Deputies has just voted favorably on a new law, which is now before the Senate. It creates a Council of Administration for the Postal, Telegraph and Telephone, giving this Council all the autonomy of action permissible under our Constitution. The Board is to consist of six members, having full authority to handle the income from the three services. It will be entitled not only to dispose of the entire revenue, but also of the 60,000 pesos which the State annually contributes towards the improvement of other public services. Under the new plan no public office pays for postage or telegrams. The Council is also authorized to propose a change in the existing telegraph rates and at the present time is considering the advisability of a change, adopting a tariff with a charge for each word of a message, including the address and signature, as is customary in the international telegraph service."

The plan of the proposed reorganization, alluded to in the communication of the Director General, was embodied in the Law of December 16, 1915, which was twice amended by the Laws of November 20 and December 17, 1918. In its final form Article I reads:

"The postal, telegraph and telephone services shall be exploited exclusively by the State, in the manner prescribed by the present law, and without prejudice to the rights granted to private concerns by special legislation."

The operation of the combined services is entrusted by this law to a Managing Board (Concejo Directivo), consisting of two permanent officials, the Director-General and Assistant Director General of the Postal, Telegraph & Telephone Service, and of seven other members to be appointed by the President with the approval of the Senate, who are to serve for four years. Of the seven members the Law further prescribes that two shall be chosen from the personnel of the General Administration of the Postal, Telegraph and Telephone Service, and shall be elected from a list containing the names of ten employes of more than ten years' service.

That the framers of this legislation believed that through this reorganization of the united services the national Treasury would be greatly benefited, is apparent from Chapter III which treats of the net revenue and advises the Managing Board to make the following distribution:

80% for the improvement of the services, i. e., construction of new telegraph lines, buildings, amortization of interest, repayment of loans, etc.

20% for the benefit of the personnel, as prescribed by Law of November 20, 1918.

To the reader the question presents itself: "will the expectations of the makers of the new law be realized?"

In the absence of any printed Annual Reports of the General Direction of Posts and Telegraphs since 1914, despite repeated urgent requests for this publication, we have no official data which show the financial result of the operation of the combined service. The last Memoria of the Postal and Telegraph Department, issued January 15, 1915, which was submitted to the Minister of Industries, Dr. don Justino Giménez de Aréchaga, contains the following paragraph which sheds some light on the financial result.

The Director General writes:

"The financial period which closed August 31, 1914, did not, as in former years, leave any deficit nor unsettled accounts, and all obligations contracted during the period have been met from the proper resources, as stated in the Law of Appropriations, and this has been done without exceeding the budgetary limits and without asking the Government for additional appropriations."

The Memoria for the year 1914 contains also the following data:

STATE TELEGRAPH		
Gross Revenue............	133,036 pesos	
Salaries of employes.......	124,233 "	
Gross Revenue minus Salaries of Employees		8,803 pesos
"TELÉGRAFO ORIENTAL"		
Gross Revenue	33,030 pesos	
Total Expenses...........	53,652 "	
Deficit..............		20,622 pesos

In the above expenses of the state telegraph no account is taken of the salaries of administrative officers, nor the expenses of maintenance and depreciation.

WIRELESS TELEGRAPH

In addition to the land telegraph lines the Government of Uruguay has a large wireless station at Cerrito, near the capital, in communication with all the ports of the republic, with a range to sea of about 620 miles. Other stations are at Rivera, Lobos Island and Paso de los Toros. The fleet is also provided with installations and wireless is compulsory on all passenger steamers plying to and from Uruguayan ports.

The recent legislation of the Government of Uruguay concerning radio-telegraphy and radio-telephony is embodied in a law of August 9, 1922.

CABLE SERVICE

In the year 1873 the Uruguayan Government granted to señor Marcoartú an exclusive concession for laying and operating a submarine cable between Montevideo and Chuy at the frontier of Uruguay and Brazil. It was understood that this cable would connect with others then under construction between Chuy and Rio de Janeiro. Shortly after the issuance of this concession it was transferred to the Montevidean & Brazilian Telegraph Company, an English corporation, chartered in 1872. Later on all these cables became the property of the Western Telegraph Company which not only tripled the cables but also operated them on the duplex system, thus offering the public a rapid transoceanic cable service.

After all cable concessions had expired in 1919, the Government of Uruguay issued a decree declaring that thereafter no further exclusive concessions for cable service would be granted. In accordance with this declaration the All America Cables, Inc., extended its submarine cables from Montevideo to Buenos Aires where they connect with its extensive cable system to the United States.

Submarine cable service between Uruguay and Europe started in 1874 via the Madeira line from Recife (State of Pernambuco, Brazil), Cape Verde Islands, and Madeira to Carcavellos (near Lisbon, Portugal), the length of the cable being 3750 nautical miles. A second cable, laid in 1884 by the Western Telegraph Company, Ltd., shortened the distance to 3657 nautical miles. This company owned and operated a number of submarine cables, some of which terminated at Rio de Janeiro, Santos, Florianopolis and Rio Grande, the latter being connected by cable with Montevideo.

A pamphlet issued in 1922 by the International Telegraph Bureau, Berne, Switzerland, containing the World's Cable Statistics, gives the subjoined data:

WESTERN TELEGRAPH COMPANY

Rio Grande do Sul (Brazil) to Chuy..	(1875)	275 km.
Chuy to Maldonado................	(1875)	221 km.
Maldonado to Montevideo...........	(1875)	130 km.
Santos (Brazil) to Chuy............	(1892)	1,404 km.
Chuy to Maldonado.................	(1892)	254 km.
Maldonado to Montevideo...........	(1892)	134 km.
Maldonado to Rio de Janeiro........	(1900)	2,038 km.
Maldonado to Montevideo...........	(1900)	131 km.

ALL AMERICA CABLES, INC.

Rio de Janeiro to Montevideo........	(1920)	2,215 km.
Santos (Brazil) to Montevideo.......	(1920)	1,984 km.
Montevideo to Atalaya (Argentine)...	(1920)	123 km.

STATE TELEPHONE SERVICE

In the book published by Postal Inspector I. de Maria (2nd edition, 1878-1890), it is stated that the first trial of the telephone in Uruguay took place in Montevideo on February 16, 1878, when don Francisco A. Lanza, in the presence of a number of invited guests, carried on a conversation over a line of the Platino Brazilian Telegraph Company with an official of the Central Railway. Shortly thereafter other trials were made between the telegraph office installed in the residence of the President and the telegraph office in Canelones; also between the offices in Salto and Paysandu. As the outcome of each of these trials was very satisfactory, the Government ordered the use of the telephone for service between various post offices in Montevideo. It is therefore evident that the Government officially used the telephone four years prior to the granting of the first telephone franchise to Captain Benjamin D. Manton for the establishment of a public telephone service.

Doubtless due to the political conditions prevailing in Uruguay, the Government gave no further thought to the development of a national telephone service until sixteen years had passed after the first trial by F. A. Lanza, who, as the reader knows, had suggested to the Government the construction of the first national telegraph lines.

Nearly seven years after the signing of the first contract between Lanza and the President of the Republic, the Government decided to equip the various departments, or political territorial subdivisions of the country, with telephone lines (líneas telefónicas departmentales) to afford rapid intercommunication between the principal towns and cities of each department. The main purpose, however, for which these lines were constructed, was to furnish the outlying districts, which up to that time had been deprived of

telegraph service, with means of reaching the existing national telegraph offices by transmitting to them telephone messages.

The national telephone service was inaugurated by the decree of April 25, 1894, signed by the Minister of Government. This decree ordered the construction of additional departmental telephone lines, and called for the preparation of a general plan by the chief engineer, Carlos Young. The Government took no further action until April 5, 1895, the date of the second decree, which entrusted the operation and management of the departmental telephone lines to the Director General of the national telegraphs.

From the very start it had been decided to construct all telephone circuits of copper bronze wire and to install Berliner transmitters and telephones.

Some of the first state telephone lines were built in the Department of San José. Construction work commenced June 21 and was finished July 29, 1895, the work comprising 135 km. of line with 273 km. of wire. All lines were brought to the administrative office of the department, situated in the city of San José.

While the Department of Soriano had originally been selected as the starting point, the construction of the lines in this department was delayed until June 26, 1896. By July 24 of the same year the work had been completed, and the department had been equipped with 209 km. of telephone line with 425 km. of wire. All lines terminated in the administrative office of the Department of Soriano, in the city of Mercedes. This office was also connected by a special line with the political headquarters in the same city. The official records state that the cost of a kilometer of silicon bronze wire did not exceed 43.23 pesos, a great saving over the price formerly charged by the contractors of the national telegraph lines.

The extent of the telephone lines constructed in other departments is shown in the subjoined table:

Department	Period of Construction	Km. of Line	Km. of Wire
Treinta y Tres	June 2, 1895—July 18, 1895	223	
Minas	May 5, 1895—Mar. 28, 1896	85	170
Cerro-Largo	May 16, 1895—May 4, 1896	192	384
Tacuarembó & Rivera	Dec. 1895—April 1896	171	933

In addition to the lines, the Government installed 55 departmental telephone toll stations in the above mentioned departments, i.e., 9 in Soriano, 9 in San José, 12 in Cerro-Largo, 9 in Treinta y Tres, 12 in Tacuarembó, and 4 in Minas.

PRIVATE TELEPHONE SERVICE

Foreword

The writing of the history of the origin and introduction of the telephone in the Republic of Uruguay has required a rather unusual amount of research work. Indeed, in no other of the South American countries are the causes that led to the establishment of the telephone service so complex and so difficult to trace. It is a somewhat strange and puzzling fact that, while the master telephone patents of Bell, Blake and Edison were available, a mere modification of the Bell Telephone which long ago has gone out of existence for lack of merit constitutes the foundation on which a telephone concession was solicited and obtained from the Government of Uruguay.

Again, three persons played prominent roles in the events leading up to the introduction of the telephone in Uruguay. Of these, Frederick Allen Gower and Captain Benjamin D. Manton were North Ameri-

cans. The third, E. F. Powers, was an Englishman, a nephew of the famous Colonel G. E. Gouraud and a brother of Mr. A. B. Powers, manager for many years of the Montevideo Telephone Company of Uruguay.

The scenes of operation of these persons were the United States, France, England, Argentine and the Republic of Uruguay.

Another difficult task confronting the historian is the tracing and delineation of Gower's activity in connection with the Consolidated Telephone Construction and Maintenance Company of London and its subsidiary, the River Plate Telephone and Electric Light Company, Limited, which latter concern started telephone exchanges with Gower-Bell telephones, first in Buenos Aires and then in Montevideo.

Finally, the Boston syndicate, consisting of Theodore N. Vail, William H. Forbes, Charles Eustis Hubbard, Charles Emerson, and George L. Bradley, incorporated in Boston as the Continental Telephone Company, is justly entitled to the claim that, through their far-sighted discernment, the telephone service was developed in Argentine and Uruguay.

After a careful survey of the material which must be recorded in order that the reader may have a clear understanding of the events underlying and leading up to the introduction of the telephone in the Republic of Uruguay, it has been thought best to treat the subject in five separate sections, namely:

Section I. Frederic Allen Gower and his Inventions.

Section II. Benjamin Dyer Manton.

Section III. The English Telephone Companies and their connection with Gower's Telephone.

Section IV. Other Telephone Concessions.

Section V. The Montevideo Telephone Company, Limited.

Section I

Frederic Allen Gower and His Inventions

Of all the persons who have taken a prominent part in the early years of the telephone none has had such a brilliant meteoric career as Frederic Allen Gower, who, without any financial resources at the time of his acquaintance with Professor Alexander Graham Bell, within the short space of seven years of an eventful business activity, became a millionaire through a long forgotten modification of Bell's telephone and Ader's microphone. Like a meteor that suddenly blazes out of the unknown depth and just as suddenly passes out of sight, so Gower in 1884, while attempting to cross in a balloon from Cherbourg (France) to England, vanished in the misty shrouds of the Atlantic.

Biographical Sketch

Frederic Allen Gower was born in Sedgwick, Maine, July 25, 1851. After the death of his father in 1859 he resided in Providence, Rhode Island. Ten years later he entered Brown University, but the want of pecuniary resources obliged him to leave college and engage in business. In 1873 he obtained a position as reporter on the Providence "Evening Press" and three years later became editor of that paper. Through his activity with the press Gower had become a member of the Lecture Committee of the Franklin Lyceum, in which capacity it devolved upon him to secure popular speakers. He thus came in contact with Professor Bell, whom he engaged soon after his first lecture at the Essex Institute at Salem, Massachusetts. As the result of this meeting, Gower abandoned journalism and through Gardiner Hubbard, then president of the Bell Telephone Association, obtained the agency for renting and leasing

telephones throughout New England, with the exception of the city of Boston. At the same time Gower became more closely associated with Professor Bell, who depended upon him to arrange his public lectures on the telephone.

In Thomas A. Watson's excellent book, "The Birth and Babyhood of the Telephone", there is a facsimile of the flier, advertising Prof. Bell's lecture at Lawrence, Massachusetts, May 28, 1877, which states that "Prof. A. Graham Bell, assisted by Mr. Frederic A. Gower, will give an exhibition of his wonderful and miraculous discovery, 'The Telephone'." As a matter of fact, Gower was so fascinated with the lecturing field and its commercial possibilities that he voluntarily gave up his contract with Hubbard to receive in return the very doubtful right to lecture on the Bell telephone. Impressed with the value of the telephone, his versatile mind turned to the study of the principles underlying the transmission of electrical signals by tuned reeds. After several months of experimentation he applied, on January 23, 1878, for a U. S. patent on an Electro Harmonic Telegraph. The Patent Office allowed his claims and on July 8, 1878, issued his first U. S. patent, No. 202539. His next venture in the telephone field was embodied in an application, dated October 24, 1878, for a Pneumatic Signal Telephone. This device is covered by U. S. patent No. 217278 and also by a British patent.

Late in 1878 Gower went to London and thence to Paris where, in conjunction with Cornelius Roosevelt of New York, he introduced the Bell telephone. In France he worked out his modifications of the Bell telephone, covered by U. S. Patents No. 217208 (issued July 8, 1879) and No. 218873 (issued August 26, 1879), both of which are also covered by British patents.

On July 8, 1879, Gower again applied for a U. S. patent on a Telephone Signal, claiming as his resi-

dence the city of Providence, R. I. This was issued on October 21, 1879, No. 220826. The only new feature shown in this patent is the attachment of a speaking tube to the telephone. On this claim Gower failed to take out a British patent. About a year later, September 15, 1880, Gower applied for a patent on his last invention, which consisted of a modification of Ader's well known carbon pencil microphone. On this he obtained U. S. patent No. 236021. The British patent, covering the same device, is dated June 26, 1880.

In the meantime Gower had advanced energetically his telephone invention in France, and meeting with unhoped for support, he established a company using the Gower-Bell instrument. He then went to London and succeeded in interesting various prominent scientific persons and government officials in his patents. With their support he organized the Gower-Bell Telephone Company of England. A notice in the "Telegraphic Journal" of London, Feb. 1, 1880, reads: "A company has commenced operations at Gresham House, Old Broad Street, to work the Gower patent telephone, using it in conjunction with a carbon transmitter."

On July 28, 1880, Gower, then residing in Providence, R. I., made a contract with Captain Benjamin D. Manton, conveying to him the exclusive right to use and exploit Gower's United States patents in South American countries. For the details of this transaction the reader is referred to Section II.

In 1883, while in London, Gower married Lillian Norton, the famous opera singer, known as Mme. Nordica, who soon separated from him. He then took up the science of aeronautics and in 1884 lost his life in an attempt to cross the English Channel in a balloon. Thomas A. Watson, who knew Gower intimately, describes him in the following words: "He

was a handsome, intelligent, well-educated man, a year or two younger than Prof. Bell."

We now take leave of Gower's work until he reappears in our history in connection with the formation of the Consolidated Telephone Construction and Maintenance Company, Limited, of London.

Section II

Benjamin Dyer Manton

Biographical Sketch

Captain Benjamin Dyer Manton was born in Providence, Rhode Island, May 10, 1829. The National Cyclopaedia of American Biography states: "He was eighth in descent from Roger Williams, also from Mary Dyer, who was hanged for her Quaker principles on Boston Common, June 1, 1660."

In 1849, after a common school education, Manton went to sea, sailing to California via Cape Horn. After a varied experience he succeeded in commanding some of the finest clipper ships that sailed from the port of New York in the China and Australian trade until the outbreak of the Civil War in 1861, when he was placed in command of the U. S. S. *Relief,* attached to the squadron of Commodore Du Pont at Port Royal, S. C. Later on he was transferred to the squadron of Admiral Farragut. After an honorable discharge from the navy, he took up the construction of steamships and entered the service of the Brazilian Government, carrying troops from Rio de Janeiro and other ports to the La Plate River during the Paraguayan war. It is recorded that within this six-year period he transported 16,000 troops without loss of life.

In 1868 Captain Manton was appointed American consul at Colonia, Uruguay, which position he retained until the office was abolished in 1907.

Just how Captain Manton became interested in the telephone cannot be stated. The probability is, however, that his keen interest in new American inventions, many of which he introduced into South America, induced him to look into the commercial possibilities of the telephone. At any rate we know that he returned to the United States in 1880, that he met Gower in the city of Providence, R. I., and obtained from him the right to exploit his telephone patents in South America.

The Bulletin of the Pan American Union, in its issue of January, 1911, published a photograph of Manton and a brief sketch of his business career and stated:

> "Captain Manton's fame rests particularly on his successful efforts to introduce the telephone, as a result of which he has become widely known as the 'Father of the Telephone in the River Plate.' Against great opposition he introduced the first telephone—the Gower-Bell—ever installed in these countries. He also installed an electric light plant and a telephone system in the city of Colonia, Uruguay."

Captain Manton was married at Providence, R. I., February 1, 1855, and died in Barbados, B. W. I., in 1914.

Manton's Contract with Gower

On July 28, 1880, Frederic Allen Gower, residing in Providence, R. I., signed a contract with Captain Benjamin Dyer Manton, granting the latter the right to use and exploit in South America all of Gower's United States telephone inventions. Shortly thereafter Captain Manton left the United States for Argentine, arriving at Buenos Aires in the fall of 1880. He immediately set out to interest prominent business men in the telephone, and was certainly successful in his enterprise. On March 2, 1881, he obtained the first telephone concession from the Gov-

ernment of Argentine.* A second concession was issued to the Compañía de Teléfonos Graham Bell on April 5, 1881. In the same year Manton opened a telephone central office called "Bolsa Telefónica de Buenos Aires", which he equipped with Gower-Bell instruments. The first subscribers' catalogue, consisting of four pages, showed 34 users.

Issuance of First Telephone Concession for Montevideo

In addition to his active telephone work in Buenos Aires, Manton, on September 15, 1880, had solicited the Government of Uruguay to grant him a twenty year exclusive telephone concession for the city of Montevideo. The petition, addressed to the President of the Republic of Uruguay, señor don Francisco Antonio Vidal, was referred to the Ministry of Government, which subsequently forwarded it to Colonel don Máximo Santos, Acting Secretary of State in the War Department, who in turn transmitted it to the Department of Public Works for report.

The opening paragraph of Manton's petition, of which the writer possesses a rather quaintly written English translation, reads:

"I, Benjamin D. Manton, for myself and in the name of a special undertaking with sufficient capital, and provided with all the necessary apparatus and material, present myself with the greatest respect before your Excellency and state:

"That I have now arrived from the United States, fully authorized to solicit from your Excellency the exclusive privilege for the term of twenty years to establish a Telephone Central or Exchange in this city (Montevideo) from whence will run wires by means of which, and for a moderate annual subscription, the subscribers or customers can speak, and as often as they desire, with each other or with any public office, church, police, railway, hospital, physician, apothecary, coach-house,

*On the strength of this concession Manton formed the Compañía de Teléfonos Gower-Bell.

mill, store, or manufacturing place, thus avoiding messengers and the loss of precious time."

In due time the Department of Public Works reported to the Director about Manton's application and criticized Manton's petition as being "drafted in vague terms which leave much latitude as to the extent to which may reach the privilege solicited." The opinion was expressed that, unless the language was modified, no concession could be granted. Moreover, any concession granted to Captain Manton "can never have as a consequence the privilege for the concessionaire of being the only one who has the right to the use of the telephonic apparatus at present known, of whatever system it may be, since such apparatus belongs already to public ownership and has been placed and used in various sections of the capital, particularly to establish communication between the old Government House, the Jefetura Policita, and other departments. * * * *

"Neither would any concession prevent the establishment of private telephone lines between two or more residents of the capital." The report adds the recommendation that the concession, as issued, should embody a clause providing that at the expiration of the concession the entire telephone installation, including buildings and accessories, should become the property of the State. The Department of Public Works approved this report, but added another clause reducing the life of the concession to ten years.

Acting through Emilio Dupre, civil engineer, Manton replied on Oct. 29, 1880, to the communication received from the Department of Public Works, stating that, in view of the objections raised, and being anxious to introduce the telephone in Montevideo as soon as possible, he would accept all the suggested modifications excepting that which demanded that the entire plant should revert to the State at the expira-

tion of ten years. However, if the Government would grant him a twenty year concession he would accept this concession, with the understanding that at the expiration of the twenty year term the entire property should revert to the State. On January 16, 1881, José M. Montero, Minister of Government, issued the following decree:

"In view of the proceedings initiated by don Benjamin D. Manton, requesting authorization to establish a telephone central, and having regard to what appears from the reports of the General Direction of Public Works, the Economic Administrative Junta at the Capital and the Government Fiscal

"Be it Resolved:

"Art. I. That don Benjamin D. Manton be authorized to establish in the Department of Montevideo a telephone central, or exchange, from whence shall radiate wires for communication with the various stations which the concessionaire will establish.

"Art. II. That this authorization shall last for ten years.

* * * *

"Art. VI. That there be conceded to señor Manton the time of twelve months for the installation of said exchange."

The final papers were issued in Montevideo on January 31, 1881. Affixed to them are the signatures of don Francisco Antonio Vidal, President of the Republic, Colonel don Máximo Santos, Minister of Government ad interim, and don Juan MacColl, representative of Captain Benjamin D. Manton.

Transfer of Manton's Concession to the Consolidated Telephone Construction and Maintenance Company, Limited

About a year after the issuance of the above decree (January 17, 1882), Captain Manton and Edu-

ardo F. Powers, both residing in the city of Buenos Aires, appeared before Laureano Carballeda, notary public, and executed a deed by which Manton conveyed to Powers, representing the Consolidated Telephone Construction and Maintenance Company, Limited, of London:

1. "All his rights and interests in telephones, telephone lines, exchanges, apparatus, instruments, chattels of every kind, and stock which he possessed known as Gower-Bell High Voice Telephone, both in Buenos Aires and in Belgrano; also all the right which belongs to him in this object and the exploitation of the said telephone system according to contract entered into with Frederic Allen Gower in the city of Providence, Rhode Island, dated July 28, 1880.
2. "All the concessions, patents, permits and privileges which he had obtained from the Governments and Authorities of the Argentine Republic and Province of Buenos Aires; also his right in the concession granted him by the Republic of Uruguay to establish and exploit during ten years telephone lines in Montevideo.
3. "The telephone concession obtained in the Republic of Paraguay."

In this deed Captain Manton obligated himself thereafter "neither to engage for himself, nor to associate himself, nor to participate directly or indirectly in any telephone business, already established, or to be established in the future, in the Republics of Argentine, Uruguay and Paraguay." In compensation for the relinquishment of his rights and interests in the telephone, Mr. Powers agreed to pay Manton the sum of £6000 in gold.

As Article VI of the concession granted to Manton for the installation of a telephone exchange in Montevideo enjoined the concessionaire to notify the Government within a stated time of the location he had chosen for the telephone central, Mr. Powers advised the President of Uruguay on January 28, 1882, that he had selected for the installation of the first

telephone exchange the Stock Exchange Building, situated at No. 137 Las Piedras Street. Probably the work of installing the central had been started immediately, as it was finished in March, 1882. This we learn from a report, forwarded on March 6, 1882, by the General Direction of Public Works to the Ministry of Government, which contains the following:

Report of Eduardo Caustatt

"On the sixth day of the current month of March (1882) I (Eduardo Caustatt) went to the house No. 137 in the Street Las Piedras, where there has been installed a provisional telephone central. I have to report that this central is already connected with the Stock Exchange and with the residence of señor Lebas, situated at No. 127 in the Street 25 de Agosto, also with the Barraca Argentina in the same street. After exchanging conversations through the central with the above mentioned places, I inspected the material to be used for connecting subscribers, etc. I was informed by the manager of the telephone central that he expected to receive additional telephone material from Buenos Aires, and that, after the delivery of this material, the concessionaire would be ready to connect up all applicants for telephone service."

Transfer of the Concession to the River Plate Telephone and Electric Light Company, Limited

On April 13, 1882, E. F. Powers, who had now changed his residence to Montevideo, appeared before Emilio Blanco, a Notary Public, and declared under oath that he had installed a telephone central in the Stock Exchange building and was ready to connect up subscribers. On July 19, 1882, he again appeared before the same Notary Public and in a document, called a "Declaratory Deed", stated that all the rights which he had acquired from Captain Manton had been for the account of the Consolidated Telephone Construction and Maintenance Company, Limited, and that "said company by a contract made May

18, 1882, in London, had sold all the rights which it possessed in this Republic (Uruguay) and in the Argentine to the similar company denominated the River Plate Telephone and Electric Light Co., Limited." This concern, founded in London in 1882, with a share capital of £100,000, organized the Gower-Bell Company of Montevideo which continued to give service until 1889, although its business had been purchased in December, 1888, by the Montevideo Telephone Company, Limited, registered in London on July 31, 1888.

Section III

The English Telephone Companies and Their Connection with Gower's Telephone

Soon after the establishment of a public telephone service in the United States, a syndicate had been formed which sold the right to use and exploit the master patents of Bell, Edison and Blake in Great Britain to a group of English capitalists, who in 1880 incorporated the United Telephone Company, Limited. The latter established a number of subsidiary concerns to work certain localities in various parts of the United Kingdom. The concessions granted to the subsidiary companies gave them the exclusive right to use the patent instruments of the United Telephone Company, Limited, within their respective districts, but the right of use only, and not of sale. It is of importance to understand this situation. Now the directors of the United Telephone Company had entered into an agreement with Messrs. Scott and Wollaston which made them the company's agents for the sale of telephones for private line purposes, but not for public exchange service. As the telephone patent situation in Great Britain had not yet been clarified, and, as it was then assumed that microtelephonic transmitters were not covered by the Edi-

son patent, Gower had developed his pencil carbon microphone for which he had taken out both a United States and a British patent. On the strength of his telephone and transmitter patents, Gower formed in London the Gower-Bell Telephone Company, Limited, for the manufacture of telephone sets. This concern, formed in September, 1880, was registered on January 31, 1881, with a capital of £200,000 in shares of £10 each. The list of shareholders includes the names of Gower, Adam Scott and C. J. Wollaston. The directors of the United Telephone Company, Limited, soon regretted that the privilege had been accorded to Messrs. Scott and Wollaston. Consequently they set about to correct the situation, and, as stated in "The Electrician" of London, January 22, 1881, offered Scott and Wollaston £50,000 to cancel the agreement. The cancellation of the agreement required also the consent of Gower. The final outcome was the decision of the directors of the United Telephone Company to organize a subsidiary concern for the purpose of manufacturing and exporting telephones and telephone apparatus. The new enterprise, called the Consolidated Telephone Construction and Maintenance Company, Limited, was registered on April 9, 1881.

At the first statutory meeting of the company, August 8, 1881, the Chairman, Sir Julius Vogel, informed the shareholders that "the Consolidated Company had an agreement with the United Telephone Company by which the latter bound themselves and the companies affiliated with them, to take all the instruments they require from the Consolidated Company at a very satisfactory rate of profit," also that the United Telephone Company, after a great deal of litigation, had succeeded in securing in its own hands practically all the telephone patents of value in Great Britain. Furthermore, in addition to such valuable rights, the Consolidated Company had "to fulfill

orders for a large number of instruments which we took over when we purchased the rights from Mr. Gower." Continuing his remarks, the Chairman referred to the fact that the Consolidated Company possessed the sole right of making and selling telephones for export, and might therefore anticipate a large export business. "We found when we came to look into the rights we had acquired that we had patents as to business abroad which are more valuable than we anticipated * * *. We were also pleased to find that we possess in South America rights which may be of considerable value. They were concessions obtained in Buenos Aires, Uruguay and Paraguay in which we had large interests, and in Buenos Aires the affair promises to be particularly successful; in fact, the matter seems so important that we have despatched a special representative to look after it and to attend to it, in conjunction with the gentleman who has already established the business."

That Gower was really the promoter of the new enterprise is plainly stated in the report of the directors of the Consolidated Company at the adjourned ordinary general meeting of June 25, 1884:

"The promoter of the company was Mr. Frederic Allen Gower, and the original directors were Sir Julius Vogel, Colonel Gouraud, Sir A. Armstrong, Prof. Alexander Graham Bell, J. P. Bigelow, P. Carnegy, Sir W. Drake, Thomas A. Edison, Frederic Allen Gower, etc.

"Of the capital of the company (£300,000), £200,000 were originally issued, and of this amount Frederic A. Gower received £91,000 in cash and also £45,835 in shares."

In accordance with the business policy of the Consolidated Company, the directors early looked for new fields in foreign countries to establish a market for their manufacture of telephones. Thus it came about that the Republic of Argentine, or more correctly speaking the city of Buenos Aires, was chosen

for a trial. Again, realizing that the foreign export business, to be a success, necessitated the installation of telephone exchanges and that such work demanded the investment of considerable capital, the directors of the Consolidated Company resolved to form a subsidiary concern, known as the River Plate Telephone and Electric Light Company, Limited, registered at London, February 25, 1882, with a capital of £100,000 in 20,000 shares.

A notice in "The Electrician", of London, February 25, 1882, gives as the object of the new enterprise:

> "To enter into an agreement with the Consolidated Telephone Construction and Maintenance Company, Limited, and to carry on the business of the telephone, telegraph, electric light and power supply company."

With one exception the board of directors of the River Plate Company was the same as that of the Consolidated Co., i.e., Sir Julius Vogel, Frederic Allen Gower, etc. From the start the new concern operated in Buenos Aires in opposition to the United Telephone Company of the River Plate until both concerns were amalgamated in 1886 under the name of the United River Plate Telephone Company, Limited.

Although not directly pertinent to the subject under consideration, the following data are of sufficient historical importance to deserve a permanent record in the history of the telephone in the Republic of Uruguay.

The River Plate Telephone and Electric Light Company, Limited, was started in Buenos Aires as a competitor of the Compañía Union Telefónica and the United Telephone Company of the River Plate, a concern brought into existence by the amalgamation of the Compañía Pan Teléfono de Loch or the National Pan Telephone Company of Buenos Aires and the Compañía de Teléfones de Gower-Bell, both of which worked under concessions received in 1881.

The United Telephone Company of the River Plate, Limited, of Buenos Aires was a subcompany, organized by the Continental Telephone Company, created in Boston in 1880 by Theodore N. Vail and associates, for the purpose of manufacturing, selling, etc., telephones to countries other than the United States of America.

On July 10, 1882, the Continental Company signed a contract with the American Bell Telephone Company by which the latter granted the former certain exclusive rights to purchase from the American Bell Telephone Company for use in certain countries of South America telephones and accessory telephonic apparatus, manufactured by the Bell Company under patents owned or controlled by it in the United States and Canada.

On December 21, 1882, the Tropical American Telephone Company, Limited, a New Jersey company incorporated in November, 1881, signed a contract with the Continental by which the latter agreed to sell to the Tropical Company that portion of the contract which it held with the American Bell Telephone Company covering Central America, Venezuela, Peru, Ecuador, Chile and Bolivia.

As the foreign telephone business proved to be very profitable, the Tropical American Telephone Company on January 6, 1883, signed a second or supplementary contract with the Continental Company by which the latter transferred to the Tropical all its remaining rights under its agreement with the American Bell Telephone Company of July, 1882, referring to Brazil, the Argentine Republic, Uruguay and Paraguay, subject, however, to an assignment of certain rights to the United River Plate Telephone Company, Limited, for the Argentine Republic, to supply that concern with instruments for Buenos Aires and Montevideo.

The following paragraph is a quotation from the contract of January 6, 1883:

"Now therefore the said Continental Telephone Company * * * do hereby, sell, assign, transfer and set over to said Tropical American Telephone Company, Limited, all its rights under said contract of July 10, 1882, to use telephones * * * manufactured by the American Bell Telephone Company and to sell or lease the same in Brazil, Argentine Republic, Uruguay, etc., and subject to the assignment already made to the * * * United Telephone Company of the River Plate * * * relating to the furnishing * * * with telephones and telephonic apparatus in their respective territories."

From the foregoing it is evident that the United River Plate Telephone Company of Buenos Aires was really the local representative of the Continental, and later of the Tropical American Telephone Company, and for this reason supplied its customers with the original Bell telephone, while Manton, after he had obtained his concession, was obliged by his agreement with Gower to equip the telephone exchanges that he installed with Gower-Bell instruments.

The relation of the Continental Telephone Company to the Telephone Company in the River Plate is fully corroborated by an item published in "The Electrician" of London, December 30, 1882:

"It is stated that arrangements have been made for the fusion of the interests on the River Plate of the Continental Telephone Company of Boston, U. S., the purchaser of the rights, patents, and property of the Rio de la Plate Telephone Company and of the National Pan Telephone Company of Buenos Aires."

The reader will recall (see Section II) that Captain Benjamin D. Manton had sold his concession for Uruguay and his contract with Gower (dated July 28, 1880) to Eduardo F. Powers, representative of the Consolidated Company of London; also that Powers, on April 13, 1882, notified the Government of Uruguay that the Consolidated Company had sold all

the rights that it possessed in Uruguay, etc., to the River Plate Telephone and Electric Light Company, Limited.

Our main sources of information about the early years of the telephone in Montevideo are the annual reports of the Montevideo Telephone Company and certain statistics published in the Anuario Estadístico del Uruguay.

At the first meeting of the River Plate Telephone and Electric Light Company, Limited, held at London, May 12, 1882, Sir Julius Vogel, who presided, reported to the shareholders:

> "We have taken over the business in Buenos Aires, * * * we have five exchanges already, and we are opening one at Montevideo. At Montevideo we have some exclusive rights."

The 1884 issue of the Anuario Estadístico supplies some interesting details about the Gower-Bell Company of Montevideo. The subsequent paragraph is a translation of the original:

> "This Company uses Hughes microphones with Bell telephone receivers. It was organized in February, 1882, and today (1884) has 700 miles of wire in operation. Its capital, including London and Buenos Aires, is £100,000, and the value of its shares £20. At the end of 1884 the Company had 674 subscribers and 38 employees. The monthly subscription rate for Montevideo is 4 pesos in the capital. In the suburbs the rate varies in accordance with the line distance."

The River Plate Telephone and Electric Light Company, Limited, continued to give service in Montevideo until December, 1888, when it was absorbed by the Montevideo Telephone Company, Limited. This is mentioned in the report of the directors of that company, published in "The Electrician", London, December 18, 1889:

> "It was deemed expedient to purchase in December last the business of the Montevideo branch of the River Plate Telephone and Electric Light Company, Limited, and thus consolidate the telephone interests in that city."

Section IV

Other Telephone Concessions

Before taking up the history of the Montevideo Telephone Company, Limited, which is still operating at the present time (1925), it is indispensable to mention briefly other telephone concessions granted by the Government of Uruguay to various persons and companies during the period 1882 to 1891, because the development of the Uruguayan telephone service since 1889 is closely interwoven with the events that are now to be narrated.

The Jackson Permit

On November 23, 1882, Edward Jackson of Montevideo, the appointed agent of the "Siemens Portable Telephone", solicited the president of the Municipal Corporation for authority to "install the wires necessary for communication between the possessors of these telephones." Naturally, such permit had to include the location of poles to carry the wires. After an examination of Jackson's request, the municipality refused to permit the setting of poles in the city proper, but was willing to allow their location in the suburbs. Jackson appealed from this decision to the Minister of Government. The latter, after consultation with the Attorney General, decided to include in the permit the location of poles in the city, and granted Jackson the permission solicited on December 23, 1882.

This permit was later purchased by the firm of Porritt and Company, who in turn disposed of it to the Compañía Telefónica la Uruguaya, Sociedad Anonima, a limited liability company that had been organized in Montevideo, February 1, 1884, and was then operating a telephone exchange in the capital at No. 137 Calle Rincon, in the immediate vicinity of the Legislative Chambers.

The subsequent paragraph which refers to this company is taken from the Anuario Estadístico, 1884:

"The Cia. Telefónica La Uruguaya operates 1,473 kilometers of telephone wire and furnishes service to 1,291 subscribers. The monthly rate is 4 pesos for residential subscribers, 4.70 for business houses, and 6 for subscribers connected to the suburban central. The capital of the Company is £35,000, the value of the shares being 100 pesos. The average number of daily conversations is 4,990 and the number of employees is 91."

Both of the above mentioned concerns continued to give service in the capital until August, 1888, when the Montevideo Telephone Company, Limited, took over the Compañía Telefónica la Uruguaya, and in December of the same year purchased the business of the River Plate Telephone and Electric Light Company.

Sociedad Cooperativa Telefónica Nacional

This company was organized in Montevideo in 1889 with a capital of 175,500 pesos consisting of 7,020 shares of 25 pesos each. It has continued in operation to the present (1925) and is providing service in the city of Montevideo and its suburbs. Being a cooperative society, its subscribers are the shareholders. Since its commencement the enterprise has been using Williams switchboards, manufactured in 1880, and Berliner telephones.

In accordance with the statistics published in the Anuario Estadístico of 1923 the company in 1889 had 900 subscribers and 773 km. of telephone line. In 1923, the latest official data obtainable, the number of subscribers amounted to 4,720 with 19,850 km. of wire (12,327 miles).

Saavedra Concession

No further telephone concessions were issued until the year 1891 when Pedro Duque y Saavedra, an elec-

trician, applied to the Minister of Government, General don Luis Eduardo Perez, for authorization to establish telephone exchanges outside of Montevideo, or quoting the language of the petition, "authorization to establish in accordance with the law of 7th June, 1877 (as has already been conceded to Messrs. MacColl and Jackson in representation of the Gower-Bell and Siemens telephonic undertakings) in all the country, cities and towns of the Republic, the telephonic stations, central and private already indicated, making use for this of the apparatus the most perfect and known up to now."

In the introduction of the petition Saavedra said that he is the owner of a telephonic undertaking in the town of San José called the country telephone company, La Hispano-Uruguaya. This concern was acquired by the Montevideo Telephone Company, Limited, in 1903.

Section V

The Montevideo Telephone Company, Limited

The Montevideo Telephone Company, Limited, was registered in London on July 31, 1888. Its original capital was £180,000, represented by 24,000 Preference and 12,000 Ordinary shares at £5 each. In 1889 the capital was increased by the creation of 5,000 Preference and 3,000 Ordinary shares bringing up the share capital to £220,000. The Directorate consisted of Mr. F. W. Jones, Chairman, and Messrs. C. H. Sanford and E. F. Powers, directors.

As announced in the prospectus of the Company, the new concern had been formed to acquire the franchise and assets of the Sociedad Anonima Compañía Telefónica La Uruguaya of Montevideo.

It has been mentioned in the preceding section that the Montevideo Telephone Company purchased the business of the Gower-Bell Company in December

of the year 1888 and in 1903 the telephone exchange in the departments outside of Montevideo, the property of La Hispano-Uruguaya.

In an article entitled "The Telephone in Uruguay", written by Mr. A. B. Powers, manager of the Montevideo Telephone Company, and published in the "Telephone News" of Dec. 1, 1914, the author states that "The Montevideo Telephone Company, after purchasing the two last mentioned concerns (i. e., Compañía Telefónica La Uruguaya and the River Plate Telephone and Electric Light Co.) immediately installed in its central exchange a multiple manual switchboard of 2000 lines capacity, and eliminated all of the Gower-Bell telephones and Gilliland switchboards, but retained in use the Bell Blake telephones and the Williams switchboards in the branch exchanges." The latter remained in operation until 1900, when they were replaced by the Standard switchboards of the Western Electric Company.

The first annual report of the Directors of the Montevideo Telephone Company gives the total number of subscribers in the capital as 1,659 on July 31, 1889. We shall see later that the number of subscribers continued to decrease until 1898, when the total number had fallen off to 1,448. Thereafter the company gained steadily in patronage. The reason of the loss of subscribers at the start is explained by the chairman of the Montevideo Telephone Company in his address to the shareholders at the first Annual General Meeting, October 18, 1889. After a brief reference to the recent amalgamation of the Montevideo Telephone Company with the Gower-Bell, "a measure which we consider expedient to take as it not only consolidates our position there, but also stops any other companies from having a footing in Montevideo," the Chairman continued, "the number of subscribers we gained by that amalgamation has been somewhat disappointing, because, when we took over

the other concern, we found that a great many of the subscribers were duplicates of our own, and they ceased the Gower-Bell subscription when we took them over."

Upon the urgent advice of the managers, Messrs. Edward and Arthur Powers, the Company decided to install a new multiple switchboard at an expense of £5,000, also to improve immediately the antiquated overhead construction by replacing the open wires with aerial cable.

That the first year's business left little to complain of is proved by the fact that after the payment of all operating expenses there still remained in the treasury of the company an available balance of £10,302 which was used first for declaring a 6% dividend on the Preferred shares, second for setting off £1,000 for a Renewal Account, and third for the payment of 2½% on the Ordinary capital.

The severe commercial depression which prevailed in Montevideo during a considerable part of the year 1890 forced a good many subscribers to relinquish their subscriptions. Despite such disadvantages the financial result of the second year of the Company's operation in the capital netted a profit of £10,000 out of which the directors declared a 6% dividend on the Preference shares, amounting to £8,308, besides adding £1,000 to the Depreciation Fund.

The third annual report of the company deals largely with the commercial conditions that prevailed in Uruguay, and especially in the capital, during the period 1890 and 1891, and brings to light the difficulties with which the company had to contend. Various comments made at the annual general meeting reveal the existence of an undercurrent of dissatisfaction among some shareholders who deprecated the loss of 507 subscribers with the consequent diminution of the receipts, amounting to £2,604, the £660 of bad debts which the business had incurred during

the year, the continuous existence of the competing telephone company in the capital, and the failure of the National Bank of Montevideo. To make matters worse, a comparison of the balance sheets of the last three years showed not only decreased receipts, but also an increase in expenditures. The situation appeared so serious that one of the shareholders expressed his fear that the company would have to go into liquidation.

Responding to the above complaints, voiced by the shareholders, the managing director refused to be saddled with the responsibility for the disasters of the past year which, he said, had been caused mainly by the unprecedented commercial and financial depression prevailing in Montevideo since July, 1890, and the collapse of commerce in the River Plate during the report year, resulting finally in revolutionary outbreaks throughout Uruguay.

In regard to the allegation that the competing company, the "Sociedad Cooperativa Telefónica Nacional", had 1,000 subscribers, he recalled the fact that that concern possessed the same number of subscribers even before the registration of the transfer and purchase of the Gower-Bell interests to the Montevideo Telephone Company. He also stated that the managing director of the Montevideo Company had negotiated for some time with the president and one of the largest stockholders of the opposition company for the purpose of reaching a common understanding in regard to the working of the two interests, without arriving at any definite results. Whether the existence of another competing company would prove to be a hindrance to the business of the Montevideo Telephone Company was a question to be decided in the future, but it might reasonably be assumed that the Cooperative Society in Montevideo stood in a position similar to that of the Cooperative Telephone Company in Buenos Aires.

Unquestionably the stoppage of the National Bank in Montevideo at a time when the company held a large amount of its notes had entailed a considerable but unavoidable loss, which was moreover accentuated by the fact that after the failure of the bank the company had been forced to accept from its subscribers the notes of that bank in payment of subscriptions, as no other money could be obtained from the people. Indeed, it was only as late as July 1, 1891, that the National Bank had resumed payment.

In his concluding remarks, the Chairman discussed the additional expenses which the company had incurred and explained that this increase had been unavoidable owing to the new regulations of the Municipality of Montevideo that made the removal of supports and poles from the streets obligatory. Although the original concession of the company contained a stipulation for the erection of poles in roads, this privilege did not apply to accepted streets. Consequently, whenever in the process of time roads became streets by the growth of the town, the removal of the poles originally put up became unavoidable, and such relocation entailed a considerable additional expense to the company.

From July 31, 1891, to July 31, 1892, the company's business improved slowly, despite the fact that the conditions in Montevideo were still in a "very unsatisfactory condition." The annual report mentions the resignation of Mr. E. F. Powers, former managing director of the Company, and the purchase of the building in Montevideo in which the central office had been installed. The managing board of the London Stock Exchange on June 1, 1893 permitted the official quotation of the preference and ordinary shares.

That a pretty sharp competition existed between the two telephone companies operating in Montevideo is revealed in the seventh annual report of the di-

rectors covering the year 1895. Referring to the loss of one of the best paying customers, the Police Department, which subscribed for 49 stations, the chairman stated that this action had not been provoked by dissatisfaction with the service rendered, but was solely due to the activity of the local competing company which, on the occasion of the change of Ministry, had succeeded in taking the police telephone service from the Montevideo Telephone Company.

During 1896 a marked improvement in the company's service was brought about by the adoption of a new multiple switchboard. Mr. Herbert Ward, who presided at the annual meeting, portrayed the condition of the company in the following words:

> "Our whole plant is to-day in a complete state of efficiency, and with the new transmitter proving most successful after some months' use, I may say our telephone service is now as near perfection as is perhaps possible, and our future prospects look promising."

At the ninth annual general meeting, held at London, July 31, 1897, the chairman opened his address with a brief comment on the political events that had recently convulsed the life of the republic.

A knowledge of the latter is indispensable to the proper understanding of the difficulties that beset the Montevideo Telephone Company since 1888, and to permit the reader to form a true estimate of the work accomplished by the representatives of the company at Montevideo.

Historical Notes

The Montevideo Telephone Company was organized during the presidency of General Máximo Tajes, who continued in office until 1890. In opposition to the strict economies enforced by President Latorre, who had resigned his office and had gone into exile

grieved by the ingratitude of his countrymen, the policy of governmental economy had been abandoned by his successor. Indeed, as much public money was spent by his successors in the ten years, 1880-1890, as had been expended in the previous fifty years of the existence of the republic, with the result that the national debt of Uruguay had more than doubled and that the deficit each year equaled 50 per cent of the receipts. These conditions were followed, in 1891, by a "Blanco" uprising in Montevideo—"Blancos" being one of the leading political clans—which however was forcibly suppressed. Under President Herrera y Obes, elected in 1890, Uruguay was sinking deeper and deeper into the financial mire, and the people, having no parliamentary remedy, openly rebelled against a system of taxation which threatened to destroy all industries. At the next election (1894), despite vehement outcries and protests against dictation and terrorism, Juan Idiarte Borda was made president. Although he had pledged himself to reform the unsound finances, he utterly failed in this task and when, in 1896, he procured the election of a congress completely under his control which barred any constitutional change, a Blanco colonel, named Lamas, raised the standard of revolt, quickly gathered an army, and signally defeated the forces of the administration. The victorious rebels speedily gained control of the eastern departments of the republic, and thereupon threatened the capital, demanding Borda's resignation. The latter on Aug. 25, 1897, was assassinated in the streets of Montevideo. Under his successor, Juan L. Cuestas, who conceded to the people minority representation and electoral reform, the leaders of the insurrectionists laid down their arms, but the few months of war had cost the Government 13 million dollars, had interrupted the collection of revenues, and had demoralized internal transportation.

Progress Under Difficulties

Referring to the then recent political events, the chairman of the Montevideo Telephone Company, Mr. Herbert Ward, at a meeting at London, October 21, 1897, spoke as follows:

"In spite of the unsettled state of Uruguay during the whole of the past year, culminating in open revolution, our company has not suffered as much as might have been expected. In fact, we are able to show substantial improvement on last year's figures.

"When once the country of Uruguay settles down again, and is blessed, through a judicious government, with more prosperous times, I am convinced that our telephone business will expand and yield an increased revenue. This opinion is shared by Mr. Sanford, one of your directors, who is, to the advantage of the Company, now in Montevideo, and who writes in very favorable terms in connection with the management and the admirable state of our service generally."

The only noteworthy incident of the next year was the reduction of the company's ordinary share capital on Oct. 19, 1898, from £220,000 to £160,000. The directors stated that this action was taken "with the object to reduce and subdivide the capital so that it should more accurately represent the company's assets." As a matter of fact, the holders of the 6% preference shares had received only 4% dividends from 1894 to 1897, while no dividends had been paid on the ordinary shares.

The steady progress of the business is obvious from the fact that the profit and loss account for subscriptions, rentals, etc., increased 12% over the prior year (1898), the total amount received during 1899 being £18,208.

Prior to the annual meeting, the managing director, Mr. F. W. Jones, had gone to Montevideo where he had carefully looked over the entire field. The result of his examination of the property is em-

bodied in a report to the directors, which contains the following recommendations:

1) The ownership or control of the "camp" lines, i. e., lines connecting Montevideo with important towns and properties within a radius of 100 miles; also some important connections beyond that limit.
2) Metallic circuits for all subscribers in the capital.
3) Improvement of the central office.

Naturally, all these contemplated improvements necessitated the expenditure of considerable capital, and, as the amounts which from year to year had been taken from revenue for the ordinary extension of the business were insufficient for the purposes above indicated, the directors set about to raise the required amounts to carry out the recommendations.

At the opening of the new century in 1900 the financial returns from the telephone business were the largest that had been recorded so far. In this year occurred also an event of far reaching consequences both for Uruguay and for the Montevideo Telephone Company, namely, the completion of the new harbor works, by which the city that up to then had been but a South American port of minor importance, became at once a great busy seaport, equalling, if not surpassing, any port in South America excepting, perhaps, that of Buenos Aires. It might truthfully be said that, due to these improvements, Montevideo became one of the greatest ports of the world as regards exports of wool, hides, sheep and cattle; while through it poured the imports of most necessities and luxuries of life for the entire republic, thus rapidly increasing the trade between Montevideo with the upper waters of the Parana and Uruguay rivers, also with Paraguay and the southern portion of Brazil.

Recognizing the prospective increase in population and business, the directors of the Montevideo Tele-

phone Company declared only a 2½% dividend on the ordinary shares, although the business had earned an amount sufficient to pay 6%, and placed £3,500 into the reserve fund by which the latter rose to £16,500, built up entirely from surplus earnings.

With commendable foresight the Board at the meeting of November 2, 1890, advised the stockholders as follows:

> **"We cannot tell when, or how soon demands for new capital expenditure may be made, that will tax our efforts to the utmost. We cannot lose sight of the fact that improvements in telephony are likely to require new instruments, switchboards, and other appliances, that extensions must constantly be made, and that an underground plant is to be looked forward to."**

It is important to remember that the change from aerial to underground construction was foreseen by the company as early as 1900, and that the serious complications that arose 15 years later were the outcome of the proposal of the company to install an underground plant in the capital.

In the winter of 1900 the managing director made another trip of inspection to Montevideo. From his address before the stockholders at the general annual meeting in 1901, the following paragraph deserves special notice:

> **"Our own business is a well established institution, and, in my judgment, only needs the latest appliances to become of very much more value than at present . . . I found that, as is not unusual in South American cities, the action of *the governing bodies was not so advanced and liberal as to tend to the rapid extension of telephone service.*"**

The favorable results of the year's business enabled the company to add £5,000 to the reserve fund and a like amount in 1902.

After long drawn-out negotiations, the company in 1903 acquired the system of "camp" lines of the Hispano-Uruguaya Cia. This purchase added to the

property of the Montevideo Telephone Company 14 small exchanges and over 300 subscribers.

During the same year don José Batlle y Ordoñez had been elected president. For the first twelve months of his administration he had to contend with a civil war, started by the "Blanco" party. Various battles were fought, but in the end the government forces routed the rebels, and in September of 1904 peace was signed and a general armistice declared. No further uprisings occurred in Uruguay until 1910.

Touching the events just mentioned, the Chairman of the Montevideo Telephone Company, at the annual general meeting of October 28, 1904, spoke as follows:

"We have double reason for congratulation. First, that the disastrous civil war which has been raging during the past year in Uruguay has terminated, and second that, despite the revolution, continued improvement in our business in Montevideo has been shown. Our accounts require little comment. They show a strengthened position, better in fact, than at any time before, and an increased net profit of £1300."

Having just returned from a trip to the United States, the speaker continued:

"The perfection to which the telephone service has arrived in that country, and the position to which the telephone service has arisen in that country, and the number of subscribers and communications, are worthy of note. They leave every other country far behind in comparison, and foreshadow what may be expected elsewhere. It is to the absence of legislative and municipal restrictions and interferences, and to the use of the most up-to-date and perfect plant, apparatus, etc., that the unparalleled success which the telephone in the United States met is mainly due, and we must prepare to act on similar lines in order to ensure our future prosperity. Underground plant, metallic circuits, improved switchboards, must come and the large expenditure connected therewith must be looked forward to and prepared for."

Finally, the chairman informed the meeting that he would again visit the River Plate because "for

some time the company had had before the government of Montevideo a project for laying underground plant. Recently arrangements had been made for electrifying the tramways in Montevideo and the directors were hopeful of being able to arrive at some arrangement with the municipality for putting their plant underground."

In the following year the company negotiated with the Uruguayan Congress and with the Municipality of Montevideo for permission to extend their system beyond the territory covered by the original franchise, to make possible direct telephone service between the capital and Buenos Aires.

At the close of the year 1906, the Directors reported that since the rearrangement of the capital of the company in 1898, the increase in net revenue for the past eight years had been over 150%.

However, in the negotiations with the national Government and the Municipality relative to obtaining permission to install an underground plant, no definite arrangement had been effected. The situation remained unchanged in 1907, although the company, in anticipation of the permit asked for, had obtained from the United River Plate Telephone Company the services of Mr. H. Planchon, a well known telephone expert, had requested him to inspect the plant and to ascertain and report the changes that would be necessary and advisable. The company had likewise asked Sir John Gavey, who was then visiting the River Plate, to examine their property in Uruguay and to determinate the character and details of the projected new capital expenditure. Finally, leave of absence had been granted to Mr. Powers, manager at Montevideo, in order that he might visit the United States and Europe, and acquaint himself thoroughly with the latest improvements in switchboards, etc.

Due to the continued prosperity of the business the dividend on the ordinary shares was raised from

5% to 6%, and by October, 1907, the reserve funds were increased to £74,500, an amount almost equal to one-half of the capital which then stood at £159,172.

Proposals for Nationalization

At the next annual meeting, which occurred July 31, 1908, Mr. Charles Lock, who presided in the absence of Mr. F. W. Jones, mentioned for the first time the rumor that the Government of Uruguay proposed to nationalize the telephone service, and added:

"We hope, however, this plan may not materialize, but we are in communication with our manager and representative there, and shall watch this matter with attention in the interest of the stockholders."

A far more detailed report of the situation, so vital to the future of the company's business, is found in the director's report for the year 1909, from which the following paragraph is quoted:

"The chairman (Mr. Charles Lock) then proceeded to deal at length with the question of the proposed installation of a Government undertaking and a concession to the company for an underground plant. He said that immediately the Board had heard that the Government had retained an English engineer to report upon the feasibility of the Government installing a plant, they (the Board of Directors) had sent out Sir John Gavey, their consulting engineer, to Montevideo. That gentleman in company with the Board's legal advisers, took steps to urge upon the public authorities the fair and legitimate claims of the company. So far the question had not been discussed by the legislative body, but the company understood that the President had recommended that body to consider it during the extraordinary session which was now sitting. It seemed to the Board and to their legal advisers in Montevideo, that the public had nothing to gain by the installation of a Government system. Moreover, it appeared to the company that the profits of the business had never been very large. One would therefore think that the Government would hardly find sufficient inducement to invest public money in the telephone system and, so far as the directors had been able to learn, out of a considerable amount of money voted by the Chamber for public purposes, no portion of it had

been appropriated for the provision of a telephone system. Having regard to all the circumstances they were not unhopeful that businesslike counsels would ultimately prevail, and that a concession would be granted to that company which had for so long sought to give an efficient and up-to-date service to the Montevideo public."

On account of the seriousness of the situation Mr. Charles Lock visited Montevideo in 1910, where he obtained an interview with señor don Claudio Williman, President of the Republic, a leader of the "Colorado" party, who had assumed office on March 1, 1907. Williman, by the way, was the first President of Uruguay who at his retirement from the administration left in the national Treasury an unprecedented surplus of 9,000,000 pesos. In his interview with the President and with various high officials, Mr. Lock reported he found that "they had studied the telephone system, and that in all probability the Government would desire to nationalize the telephone service, and establish a service of its own. However, during the discussions the officials had made some suggestions, capable of being worked out into an agreement which, if the Uruguayan Government would abandon its idea of nationalizing the telephone service, would be satisfactory to both parties. Apparently there was no prospect of an early settlement, because the Government was occupied with large schemes relative to the taking over of various other important industries. It would indeed be an advantage if the Government reached some definite conclusion, and if they really wanted a national telephone service, why did they not purchase the company as a nucleus?"

The subject was again brought to the attention of the shareholders at the annual meeting held on October 23, 1912. They were told that the company had so far failed to obtain a concession for an underground plant. "Nevertheless the delay had not been

without advantage to their business, especially as there had been considerable development in improved automatic exchange apparatus during the period that had elapsed since they had started to make application to the Government. Automatic systems were then in use in England, and in the opinion of the best experts it was the exchange apparatus of the future. The company had also been notified that the president of Uruguay had recommended to the Government the adoption of a national telephone service, but no definite action could be taken until the matter had been referred to the Government Department, an institution similar to the British Board of Trade. As a matter of fact, it would seem quite unnecessary for the Government to incur the heavy expense incidental to the installation of a telephone plant, particularly as the Montevideo Telephone Company was quite willing, in any concession which they might ask for, to give the Government the right to take over their property on fair terms of purchase. Indeed, such an agreement would seem the most satisfactory one, because it would not deter the influx of foreign capital into a country which so badly needed it for its development. At any rate it would seem reasonable to believe that the Government would not attempt to enter into competition with the company."

During March, 1913, the entire telephone plant in the River Plate suffered severely from one of the worst storms that had ever been experienced in that section of South America. It took two months to repair the damage. While engaged in this work, the local representative of the company went to the Municipality to ask consent that certain sections of the lines in the capital might be placed underground. The Municipality granted a permit for the lines located in the streets of Bartolome Mitre, Colonia, and Caigue, whereby the underground sections were extended to about a mile.

In connection with the placing of the wires underground, the chairman at the annual meeting of the company on October 29, 1913, reaffirmed that "for years past they had been desirous of installing an underground system with the object of improving the service and giving the public the benefit of the most modern and up-to-date appliances known, and it was not their fault that this had not been done.

"While the Government had repeatedly talked of installing a system of their own, no serious action had been taken. However, only recently a bill had been introduced into the House of Deputies authorizing the Government to establish its own telephone system. During the discussion of the bill a deputy had raised the contention that the company had no concession whatever for its telephone enterprise, so that after the Government had installed its own system, which might take four years, the municipality was in a position to order the company to remove its plant and apparatus without receiving any compensation whatever. To prove the fallacy of such statement the company had obtained the best legal advice it could, both in Montevideo and London, which confirmed the view held by the Board of Directors, that they not only had a good and valid concession, but that it was perpetual in character, and consequently whatever might happen the company had a strong claim for recompensation. Certainly the Government experts must recognize that the installation of a national telephone system would mean an expenditure of from two to three million dollars, a sum which it would be difficult to raise."

Letter of the Director General

The intentions of the Government as regards the nationalization of the telephone were set forth in a letter from the then Director General of Posts and

Telegraphs, F. Garcia Santos, to the Postmaster General of the United States. This letter was written in answer to an inquiry made August 6, 1914, concerning the telephone and telegraph services of Uruguay. In his reply the Director General wrote that a new law had been passed by the House of Deputies, which created an administrative board, consisting of six members, for the postal, telegraph and telephone services, with absolute authority to handle the income from these services, and to propose changes in the rates, etc. Referring to the telephone service, the Director informed the Postmaster General of the United States that:

> "There are two telephone companies operating in the capital, neither of which has ever received an exclusive franchise from the Government, so that the State can exploit the telephone service throughout the country.
>
> "There are a number of small telephone exchanges in the other departments, all of which furnish service under temporary licenses, which can be cancelled at any moment."

He also added that the Government was considering the establishment of a national telephone service by installing in Montevideo an underground system capable of serving some 20,000 to 25,000 subscribers. This plan had been submitted to the English engineer, Mr. A. R. Bennett, who had been brought out from London to Montevideo. Having finished his studies, he had embodied his conclusions in a report to the technical commission, presided over by the Director General. That body had laid the whole matter before the Legislature. It was estimated that the cost of installing a national telephone service would amount to about $2,000,000, and it was proposed to raise this amount by a loan, to be repaid from the revenue derived from the telephone service.

The Director General concluded his letter by assuring the Postmaster General of the United States that

the administration was not only looking forward to the establishment in the near future of a telephone system in the capital, but in the entire republic.

Uruguayan Telephone Progress During the World War

At the annual meeting of October 23, 1914, the chairman expressed the opinion that the position of the company with the Uruguayan Government was better than it had been for some years past; also that the state of affairs caused by the European war rendered it a matter of satisfaction, rather than the reverse, that the company had not been committed to the heavy expense which an underground system would have involved, an expenditure estimated from £200,000 to £300,000.

On account of the continued depression of business conditions, which affected Uruguay as it did all other South American countries, the number of subscribers decreased by 176 during the year 1915. This loss in turn caused a diminution in the net profits of £2,749, compared with those of the preceding year. In this connection attention is called to the fact that the national debt of Uruguay, which in 1860 amounted to 2,726,000 pesos, had reached a total of 141,144,000 pesos by the end of 1914.

In March, 1915, President Viera succeeded Claudio Williman as Chief Executive of the Republic. This change in the administration brought into office a number of persons who had little or no knowledge about the negotiations that had been carried on between the company and the Government, and naturally it took them some time to inform themselves regarding the situation. That the new officials had very decided views about the matter is apparent from a law which was passed by the Senate and House of Deputies on December 16, 1915, which gave to the State the exclusive monopoly of the postal, telegraph

and telephone services of Uruguay. A later decree authorized the Government to fix the date when the actual enforcement of the monopoly of these services should take place, which were, to quote the Spanish text, "exploitados en la actualidad sin autorización legislativa" (at present carried on without any legislative authority). The law also provided that the monopoly of the telephone service in the capital should become effective as soon as a national telephone plant had been installed. In the meantime, all companies or private individuals who were at present furnishing such services should continue to do so under a temporary license ("con caractér provisorio"). The London Times of August 26, 1915 interpreted this phrase to mean "working on the basis of a mere precarious administrative authorization."

At this point it may be well to set forth the method by which, up to the enactment of the law of December 16, 1915, licenses for the construction of telephone exchanges could be obtained in the various departments of the republic, outside of the city of Montevideo. The applicant had only to send a written request to the "Ministerio del Interior", which department, after an examination of the proposition, would forward the application to the municipal authorities of the locality in which the exchange was to be installed. If the municipality raised no objections, they then issued a "permiso precario", or temporary permit, revocable at any time at the will of the municipality. However, a concession for furnishing a telephone service in the capital had to be passed upon by the Legislature.

At the annual meeting of the Montevideo Telephone Company held on November 24, 1916, the chairman described the situation as follows:

"Considerable pourparlers had taken place during the year with the Minister of Industries, but the company was not yet within sight of the granting of the concession, nor could he say

that it would be granted, but the atmosphere was rather more favorable than for some time past. While the company was quite ready to take the concession when they could get it, they hoped that the actual expenditure of money thereunder might be deferred as long as possible, not only in the interest of the company, but also in the interest of the Government. One of the terms of the concession was that the Uruguayan Government should have the right to expropriate the undertaking at their convenience and discretion on terms which the directors considered satisfactory, and the more the company had to pay for the plant, labor, etc., in installing the system, the greater would be the cost to the Government when they came to expropriate."

The "Diario Oficial" of December 4, 1918, promulgated a resolution of the Administration of Posts, Telegraphs and Telephones, dated November 25, 1918, with reference to technical and financial studies for an underground system in Montevideo. This resolution authorized an American concern to make the necessary studies, but emphatically stated that such authorization did not constitute an engagement or obligation of any kind with the concern mentioned, and that it would authorize, under the same conditions, the making of similar studies by any other concern or individual.

Plans and Difficulties

Early in 1919 the directors of the Montevideo Telephone Company submitted to the shareholders resolutions to raise the capital to £220,000 by the creation of 60,000 new ordinary shares of £1 each, and to capitalize £57,963 of the undivided profits and distribute it by allotment of one new ordinary share for every four preference shares held, and one new ordinary share for every two ordinary shares held; also to convert the preference shares into ordinary shares. By the addition of 1175 new subscribers during the year, substantially increasing the receipts from sub-

scriptions, this item, for the first time in the history of the company, reached nearly £100,000.

Desiring to expedite the granting of a permit for the installation of a modern underground system, the company sent a representative to Montevideo who was instructed to place his experience at the disposal of the local board and of the Uruguayan Government, with the result that the company lodged with the Government a proposal embodying definite terms for a contract.

At the annual meeting in November, 1920, the chairman reminded the shareholders that, though the company had last year provisionally arranged a draft concession with the representatives of the Government, and had awaited the official ratification of this agreement, the Directors had been advised by cablegram in March, 1920, that the Administration of Posts, Telegraphs and Telephones had invited tenders for a complete underground telephone installation in the capital, with exchanges to be equipped with the central battery system; also that, in accordance with the stipulations of the Government, bids were to be received by August 7, 1920. As on that date only two tenders had been submitted, a legal difficulty had arisen because under the Uruguayan law as it then stood the Government could not consider any bids unless at least three had been submitted. Consequently the two tenders were returned unopened. However, an official announcement had extended the time for lodging tenders to December 18th, when they were to be opened irrespective of the number received. The chairman finally voiced the hope that, despite such unlooked for events, the Government would grant the company a satisfactory concession which would permit them to raise the necessary capital to provide Montevideo with a thoroughly modern telephone system.

Despite such unfavorable conditions, the business of the company did not suffer as is evidenced by the gain of 1,207 new subscribers during the report year ending July 31, 1921, bringing the total number of stations connected with the system up to 11,931. Moreover, the shareholders received an annual dividend of 8%. Viscount St. Davids, who as chairman of the Board had recently visited Montevideo for the purpose of inspecting the property of the company and to inquire into the circumstances arising from the present condition of affairs, in his annual report to the shareholders emphasized the fact that the company had been at a disadvantage for a good many years in that they had not got a concession that would enable them to do the work properly. As the Government had lately decided on installing its own system, it had contracted with the Western Electric Company to install a plant. The contract entered into was subject to action by the Legislature to provide funds for carrying out the work. So far the Legislature had taken no action.

On November 29, 1921, the company, through its local representative, laid before the Government of Uruguay a proposal for the sale of its entire plant, and embodied this offer in an ad-referendum agreement with the Administration of Posts, Telegraphs and Telephones of Montevideo, subject however to the sanction and ratification of the shareholders.

Telephone Strike and Government Intervention

Following the completion of this agreement, matters in Montevideo remained *in statu quo* until August 31, 1922, when the employees of the company threatened to declare a strike within forty-eight hours unless their wages were immediately increased and all their other demands complied with. This action placed the company in a most embarrassing position,

which is described in the report of the directors submitted to the shareholders at the 34th ordinary general meeting held November 1, 1922, from which the following paragraphs are quoted:

"The question of wages raised this difficulty. The contract had been entered into with the Administration of Posts, Telegraphs and Telephones for the sale of the Company's undertaking, and if the Company in the interim of the signing of this contract and the handing over of its plant increased to a very considerable amount the cost of operation, there was a danger of the Administration demanding a reduction in the price. The fears entertained in this respect were confirmed by the Postmaster-General who, in an interview with the press, stated that in the event of the Company granting the increases demanded by the employees, the Post Office would claim that an amount equal to these increases should be deducted from the purchase price.

"As the Company was unable to grant the unreasonable demands of the staff, the strike was declared on the 2nd of September, 1922. The leading hands in the exchange and the artisans remained loyal to the Company, and with these and a number of supernumerary operators, who offered their services, the telephone service was rapidly reorganized. The Company at the same time published an advertisement in the newspapers that it was willing to permit any employees who had abandoned their posts to return to same up to 6 p. m., on Sept. 6th. On the 8th the Municipal Council of Administration offered its intervention to settle the strike on the basis of a full compliance with the demands, and threatened confiscation of the property in the event of a refusal. The Company had no course but to decline the suggested intervention. A communication was then addressed by the Company to the National Administrative Council requesting the intervention of that body. Certain suggestions were considered and the Company stated that it was quite prepared to go into the question of increased rates of pay in conjunction with increased rates of subscriptions if the Administration of Posts, Telegraphs and Telephones, who were directly interested in view of the ad-referendum contract for the sale of the Company, expressed its approval. When this reply was considered by the National Administrative Council a question as to the powers of the Post Office to effect the purchase was raised and the Council decided to postpone further consideration of the matter. At a subsequent meeting of the National Administrative Council it was arranged to submit the

matter to the Government's legal advisers for an expression of opinion on the points raised. Meanwhile, the Municipal Council met and decided to decree that the Company had no right to exist and issued a notice to the Company that it should immediately cease operations, and that, if necessary, the assistance of the police would be solicited to carry out the injunction."

To explain fully the demands made upon the Montevideo Telephone Company by the Administrative Council, a copy of the decree is subjoined:

"CONCEJO DE ADMINISTRACIÓN DE MONTEVIDEO. Montevideo, Setiembre 18 de 1922. Atento a que no puedo tolerarse que una empresa perturbe el servicio público que está encargada de realizar, por un desmedido afán de lucro que la obliga a no ceder en nada a las modestas mejoras que su personal solicita, y de acuerdo con las atribuciones que la Ley le otorga, el Concejo de Administración de Montevideo declara el cese, en el día de hoy, de la explotación de teléfonos por la Compañía Telefónica de Montevideo. Para hacer efectiva esta resolución, será solicitado el apoyo de la fuerza pública. Comuníquese a la Compañía Telefónica de Montevideo y la Jefatura de Policía. PONCE. Hector Alvarez Cina, Secretario General.

"MINISTERIO DE INDUSTRIAS. Ley. Establece las obligaciones que debe cumplir la Compañía Telefónica de Montevideo, para seguir funcionando en uso de la autorización precaria y provisoria a que se refiere el artículo 1° de la Ley de 16 de Diciembre de 1915.

"PODER LEGISLATIVO. El Senado y Cámara de Representantes de la República Oriental del Uruguay, reunidos en Asamblea General,

DECRETAN:

Artículo 1°. La Compañía Telefónica de Montevideo, para seguir funcionando en uso de la autorización precaria y con caráoter provisorio a que se refiere el artículo 1° de la Ley de 16 de Diciembre de 1915, deberá abonar a sus operarias telefonistas, empleadas en efectividad y en la Capital, el sueldo mínimo de $50 mensuales, y a los demás empleados que ganen menos de $100 un 25% de aumento sobre los sueldos actuales.

No podrá, además, alterar ni aumentar sus tarifas actuales sin autorización legislativa.

Igualmente quedará obligada a reponer en su puesto a todo el personal a su servicio antes de la iniciación de la huelga actual.

Artículo 2°. Abonará, además, al personal en huelga el sueldo correspondiente a los días que haya estado sin trabajo.

Artículo 3°. Communíquese, etc. Sala de Sesiones del Honorable Senado, en Montevideo a 5 de Octubre de 1922.

José Espalter, Presidente.
Ubaldo Ramón Guerra, 1er. Secretario.

"MINISTERIO DE INDUSTRIAS. Montevideo, Octubre 6 de 1922. Cúmplase, acúsese recibo, públiquese e insértese en el R. N. Por el Concejo;

Campisteguy—Luis C. Caviglia—T. Vidal Belo,
Secretario."

ADMINISTRATIVE COUNCIL OF MONTEVIDEO. Montevideo, September 18, 1922. As it cannot be tolerated that a company can disturb a public service, which it is its duty to furnish, by an excessive desire for profit which forces the company to refuse the modest increases which its staff requests, and which are in accordance with the provisions of the law, the Administrative Council declares that the Montevideo Telephone Company shall immediately cease operation. In order to make this resolution effective the assistance of the police will be requested.

The Montevideo Telephone Company and the Police are hereby informed.

MINISTRY OF INDUSTRIES. Law. Be it enforced that the Montevideo Telephone Company must conform to the obligations imposed upon it, in order to be permitted to continue to enjoy the precarious and provisional permit which is referred to in Article 1 of the law of December 16, 1915.

LEGISLATIVE POWER. The Senate and the House of Deputies of the Republic of Montevideo, united in the General Assembly, decree:

Article 1. That the Montevideo Telephone Company, in order to continue to enjoy the precarious and provisional permit referred to in Article 1 of the law of December 16, 1915, must pay to its

telephone operators at present employed in the capital, a minimum salary of 50 pesos per month, and to all other employees who receive less than 100 pesos per month there shall be granted an increase of 25% over the present salary. Moreover, the company shall not have the right to change or increase its present rates without legislative authority.

The company is also obliged to reinstate all the personnel who were in service prior to the commencement of the strike.

Article 2. The company shall furthermore pay to the employees now on the strike wages corresponding to the days they have been idle.

Article 3. Let the above decree be published.
Given in the Assembly Hall of the Senate, Montevideo, October 5, 1922.

MINISTRY OF INDUSTRIES. Montevideo, October 6, 1922. Let the above be published and recorded in the official records.

However, the company, denying the right of the Administration to withdraw from the negotiations, submitted to the shareholders at the meeting on November 1, 1922, a resolution for the sanction and ratification of the ad-referendum Agreement of November 29, 1921, for the sale to the Administration of the company's plant in Uruguay for the sum of 700,000 pesos.

During the report year ending July 31, 1923, the working expenses of the company rose to £102,276, as compared with £80,732 in the preceding year. This heavy increase was due to three causes, viz., the damage to the lines by the severe storm that occurred in July, 1923; the loss of about 400 subscribers who gave up service as a result of the strike of the operators and linemen in September, 1922; and the serious damage which the property of the company suffered by overt acts of the striking employees.

Negotiations for Nationalization

At the annual meeting of the company held on November 6, 1923, the Chairman, Viscount St. Davids, spoke as follows:

"You will remember that at the last meeting of the shareholders we asked you to ratify the ad-referendum agreement which had been concluded with the Postmaster-General in June, 1922, for the sale of the company's business in Uruguay, and you did so. The purchase price had been fixed at $700,000, payable in three annual instalments, and had the company not been treated so unfairly by the Government in Monte Video the profits would have been enough in the three years to meet those payments. * * * In other words, the Government, under the agreement, merely guaranteed to the company for a period of three years the amount of the profits in Monte Video as disclosed by the accounts for the year ending July 31, 1922.

"It would seem that the agreement was a most favorable one for the Government, but having regard to the fact that the profits in Monte Video would be subject to the heavy taxation in this country and would be free of such taxation if treated as a sale of the company's property, the directors decided to recommend the shareholders to ratify the agreement.

"Owing to the changed financial conditions caused by the passing of the new law in October, 1922, compelling the company to increase wages, &c., the Postmaster-General has up to the present refused to complete the definitive contract."

As a consequence of the increased working expenses the net profits for the report year were only £17,182, as compared with £28,996 in the preceding year, so that the rate of dividend paid was 5% instead of 8% as in 1922.

The last annual report of the company, issued October 27, 1924, briefly refers to the situation and states that "at the present time the position of the company remains unaltered." It also mentions that the increase in subscribers during the report year amounted to about 400.

That the rather unfortunate telephone situation of Uruguay will at last be settled is foreshadowed in

a cable message of January 27, 1925, which states that the Uruguayan Administrative Council has agreed to submit the telephone question to a special session of Congress, and that it is believed some definite action will now be forthcoming.

APPENDIX

Telephone Statistics

Year	Sociedad Cooperativa Telefónica Nacional		Montevideo Telephone Company+	
	Number of Stations**	Kilometers of Wire**	Number of Stations*	Kilometers of Wire**
1889	900	773	1,659	5,154
1890	900	3,436	1,556	5,154
1891	900	4,982	1,364	5,154
1892	900	4,962	1,329	5,154
1893	1,215	4,972	1,383	5,154
1894	1,355	5,690	1,303	5,154
1895	1,420	6,450	1,254	5,154
1896	1,510	6,830	1,287	6,233
1897	1,615	7,020	1,333	6,420
1898	1,728	8,190	1,448	6,515
1899	1,790	8,410	1,996	6,620
1900	1,841	9,200	2,090	6,620
1901	1,945	9,500	2,125	6,995
1902	1,990	9,850	2,327	7,346
1903	2,035	10,000	2,584	7,735
1904	2,100‡	10,375‡	2,639	8,830
1905	2,170‡	10,750‡	2,963	10,055
1906	2,240‡	11,125‡	3,417	12,302
1907	2,300‡	11,500‡	3,816	14,458
1908	2,394	11,875‡	4,147	16,656
1909	2,544	12,250‡	4,521	17,436
1910	2,850	12,625‡	5,048	18,462
1911	3,230	13,000	5,442	13,227
1912	3,650	15,800	6,003	14,151
1913	3,780	17,650	6,465	21,350
1914	3,750	16,900	6,645	21,732
1915	3,880	17,050	6,469	22,661
1916	3,800	18,000	7,033	22,973
1917	3,820	18,200	7,647	25,142
1918	3,880	18,500	8,426	28,474
1919	4,200	18,800	9,601	30,844
1920	4,400	18,600	10,724	32,234
1921	4,610	19,850	11,931	33,908
1922	4,720	19,850	12,029‡‡	34,245‡‡
1923	4,055	19,850	12,229‡‡	34,876‡‡

+ For years ending July 31st.
** From Anuario Estadístico, Montevideo, 1923.
* Furnished by Mr. Rivers.
‡ Estimated.
‡‡ December 31st.

Summary of Telephone Statistics of Uruguay

(Latest available data)

Name of Company	Headquarters	Department	Investment (pesos)	Number of Telephones	Kilometers of Wire
Montevideo Telephone Company	Montevideo	Montevideo	1,700,000	12,229	34,876
Sociedad Cooperativa Telefónica Nacional	Montevideo	Montevideo	175,000	4,055	19,850
Empresa Telefónica Estratta Hermanos	Artigas	Artigas	18,000	182	400
" " Hispano-Uruguaya	Trienta y Tres	Trienta y Tres	12,000	145	300
" " La Activa	Trinidad	Flores	30,000	350	1,500
" " La Comercial	José Batlle y Ordoñez	Minas	5,000	50	35
" " La Carolina	San Carlos	Maldonado	15,000	142	135
" " La Economica	San Fructuoso	Tacuarembó	146,000	645	3,700
" " La Economica	Rocha	Rocha	40,000	300	390
" " La Economica Internacional	Rivera	Rivera	85,000	620	620
" " La Nacional	Paysandú	Paysandú	50,000	550	710
" " La Nueva	Durazno	Durazno	—	—	—
" " La Oriental	Dolores	Soriano	10,000	185	495
" " La Oriental	Trinidad	Flores	20,000	300	600
" " La Rural	Conchillas	Colonia	12,000	38	300
" " La Sanducera	Paysandú	Paysandú	—	—	—
" " La Union	Durazno	Durazno	64,000	642	1,896
" " La Union	Mercedes	Soriano	52,000	510	470
" " La Uruguaya	Melo	Cerro Largo	20,000	269	224
" " La Uruguaya	Carmelo	Colonia	18,000	210	210
" " Progreso	Minas	Minas	96,000	650	900
" " Rio de la Plata	Maldonado	Maldonado	16,000	200	140
" " Rio Negro	Paso de los Toros	Rio Negro	9,000	110	190
" " Sarandí del Yi	Sarandí	Durazno	6,000	80	200
" " Tomás Gomensoro	Artigas	Artigas	6,000	25	30
Teléfonos de Colonia	Colonia	Colonia	30,000	350	500
Teléfono Helvético	Nueva Helvecia	Colonia	14,000	134	245
Teléfono Salteño	Salto	Salto	50,000	620	715
Total			2,699,000	23,591	69,631

General Telephone Statistics of Uruguay

(From Anuario Estadístico)

Year	Number of Companies	Number of Subscribers	Kilometers of Wire
1911	29	12,109	31,824
1912	30	13,899	36,470
1913	32	15,842	46,676
1914	32	15,932	47,624
1915	19	14,347	52,508
1916	19	16,545	61,904
1917	20	18,188	60,159
1918	28	19,404	64,464
1919 1920 1921	No information.		
1922	28	24,136	68,805